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Editorial

Outdoor Play and Early Learning

CJEE is pleased to present this special issue of the journal on early years outdoor play, in collaboration with the Lawson Foundation. The issue is produced in conjunction with, and as a follow-up to, presentations given at the Lawson Foundation's Symposium on Early Years Outdoor Play (EYOP), which took place October 24–26, 2018. The symposium had an interdisciplinary focus on outdoor play for young children and brought together a global network of scholars, policy makers, and practitioners. One of the key outcomes of the symposium was a discussion paper titled "Advancing Outdoor Play and Early Childhood Education." This paper was developed by the Lawson Foundation (2019) and was collaboratively reviewed and revised by symposium participants both during and after the event. The paper outlines six major themes related to advancing EYOP:

1. The importance of adopting a multi-sector ecosystem lens to address outdoor play
2. Approaches to integrating Indigenous curriculum and ways of knowing about outdoor play into Western early childhood education
3. Building support for, and enabling, risk in outdoor play
4. The need to make outdoor play pedagogy explicit in post-secondary early childhood education training and to support ongoing professional learning needs
5. The multiple gaps and barriers to outdoor play in policies and standards, and the inconsistent implementation of such policies by stakeholders
6. The need to develop a robust Canadian research and knowledge mobilization strategy to support evidence-informed policy and practice (Lawson Foundation, 2019, p. iii)

The papers presented in this special issue take up, extend, and respond to many of the themes identified in the symposium discussion paper. We are pleased to have curated this issue as an artifact of the symposium that not only complements the discussion paper but also draws further attention to the ongoing need for parallel work in policy and pedagogy—areas that "fuel new and ongoing efforts to advance outdoor play and ECE across Canada" (Lawson Foundation, 2019, p. 18). The Council of Outdoor Educators of Ontario (COEO) also produced a practitioner versus research focused follow up to the symposium in their journal - Pathways (COEO, 2019).

Environmental education (EE) is inherently interdisciplinary, and CJEE has long embraced interdisciplinary inquiry into EE. Leveraging the EYOP symposium as a springboard for conceptual and empirical research papers, this special

issue represents a unique constellation of papers with connections to adventure-based education, child study, early childhood education, experiential education, and health and physical education. We are pleased to share the following six papers with CJEE readers and stakeholders across the EYOP multi-sector ecosystem.

The special issue begins with a paper titled "Are Parental Perceptions of Risk and Attitudes Towards Risk-Taking During Play Associated with Preschoolers' Physical Activity and Physical Literacy?" In this paper, **Michelle Rolande Stone, Natasha Webber, Jane Cawley, Natalie E. Howser, and Jane F. L. Kirk** report on their quantitative inquiry into the associations between parents' self-reported ideas about risk-taking in their children's play and the children's physical activity (PA) levels and physical literacy (PL). In this paper, PA and PL are measured by accelerometer tracking and a validated test of gross motor ability and physical skills, respectively. The results demonstrate statistically significant relationships between parental perception of risky play and both PA and PL (there is a greater acceptance of risk associated with increased PA/PL). While the authors acknowledge that the research design presents some limitations on generalization, their findings contribute to a growing knowledge base that points to the importance of adventurous outdoor play on children's overall well-being, of which PA and PL are important elements. In the context of environmental education, this paper may be read as a further call for capacity-building in the fundamental movement skills (e.g., running, jumping, climbing, manipulating objects) that allow children, with their families, to be present in and engage with natural spaces, where environmental learning can unfold.

In their paper titled "Taking it Outside: Engaging in Active, Creative, Outdoor Play with Digital Technology," **Monica McLynn-Stewart, Nicola Maguire, and Emma Mogyorodi** explore two questions about the integration of digital technology into children's outdoor play in the context of kindergarten classrooms in Ontario. Working from two distinct bodies of research literature that suggest potential benefits for children in both outdoor play and digital technology use, the authors assess the value of integrating tablet-based, open-ended digital technology application into child-led outdoor play. Through a robust qualitative design (27 kindergarten educators participating over three years, plus analysis of pedagogical documentation of children's outdoor play with digital technology), the study documents the participating educators' shifting understanding of digital technology in relation to outdoor play. At the outset of the research, many educators viewed the technology as a likely distraction from outdoor play, but through the training and experience that was effectuated by the research project, the educators were more able to see digital tablets as tools that both mediate the learning experience of kindergarten children during outdoor play and offer opportunities for ongoing reflection on and meaning-making in outdoor play experiences. These findings are significant to an ecosystemic perspective on early years outdoor play as developed in the symposium discussion paper

(Lawson Foundation, 2019): Children's contemporary lives are literally and metaphorically "networked," that is, intersected between the material and digital, as well as the indoor and outdoor, worlds. McGlynn-Stewart, Maguire, and Mogyorodi's findings highlight this indoor–outdoor–digital–material nexus. They call for further inquiry into the benefits and deficits of young children's technology-infused outdoor play in order to further elucidate best practices.

Michal Perlman, Nina Howe, and Catherine Bergeron's paper titled "How and Why did Outdoor Play Become a Central Focus of Scottish Early Learning and Care Policy?" illuminates Scotland's Early Learning and Care (ELC) Policy as a leading example of a jurisdiction advancing outdoor play programs (OPP) through progressive public policy that is shaped by innovation at the community programming level. Through government document analysis, stakeholder interviews (including government officials, educators, and advocacy group representatives), and site visits at both urban and rural ELC OPPs, the authors identify seven themes encompassing program heterogeneity, policy, quality, risk, educators' roles, barriers, and the question "why now?" These findings resonate strongly with theme five in the Lawson Foundation's discussion paper, which relates to policy deficiencies that have the potential to limit the advancement of EYOP opportunities. Perlman, Howe, and Bergeron laud Scotland as a jurisdiction that has effectively navigated policy development in ways that foster rather than hinder early years outdoor play. Their discussion emphasizes the Care Inspectorate's decisions, which prioritize program quality as a driving policy, honour the unique program designs that have emerged in response to community needs in each program milieu, and approach OPP risk assessment in ways that include program benefits rather than viewing risk in isolation. The authors conclude that Scotland's example of OPPs in regulated ELC contexts is worthy of study by researchers and policy makers around the world—including Canada.

Whereas Perlman, Howe, and Bergeron's work focuses on early learning and care policy in a national context, the next paper, by **Blair Niblett, Kim Hiscott, Marlene Power, and Hanah McFarlane,** concentrates on a single case. Titled "Partnering for Outdoor Play: A Case Study of Forest and Nature School Programming in the Context of Licensed Child Care in Ottawa, Ontario," the paper investigates the policy implications of a partnership between two organizations—The Child and Nature Alliance of Canada (CNAC) and Andrew Fleck Children's Services (AFCS)—to offer forest school programming in the context of government licensed child care in Ontario. Theoretically grounded in the notion of the Anthropocene, the authors engaged in a collaborative action research project to identify those key policy aspects of the CNAC–AFCS partnership that allowed for the development and piloting of a licensed childcare program that operates within a forest and nature school framework. Several key themes emerged from analysis of the case study data, including: understanding a continuum of Forest and Nature School (FNS) pedagogies; working to influence regulatory disconnections between built and natural play environments; and

advancing social and ecological justice values through forest and nature school programs. In alignment with theme five in the Lawson Foundation discussion paper, the authors address gaps and barriers that exist in Ontario policy and regulation and which hinder the scalability of FNS as an important potential driver of EYOP.

Shifting to another aspect of an EYOP ecosystem, the next paper moves upstream from direct program delivery policies and explores the realm of pre-service teacher training in early childhood education as a lever for advancing early years outdoor play. In their paper, "College Faculty's Outdoor Play Pedagogy: The Ripple Effect," **Beverly Deitze and April Cutler** argue for increased attention to pre-service early childhood educator training as crucial to advancing the delivery of outdoor play in early years programming. Two key findings emerge from their environmental scan of Canadian ECE programs offered nationally by colleges and institutes. First, there is a shortage of ECE training programs that include course requirements explicitly naming outdoor play as a course topic or learning outcome; relatedly, only about one-third of programs are found to include outdoor play elements in ways that are embedded as components of other courses. Second, there is a need for comprehensive faculty development for those who participate in early childhood teacher training. Because ECE faculty come from a broad range of interdisciplinary backgrounds and experiences, there does not seem to be a widespread collective knowledge base related to outdoor play theory and practice from which faculty can develop pedagogies for mentoring new early childhood educators. This systemic problem renders EYOP as a peripheral rather than central element of many Canadian ECE training programs. Deitze and Cutler's findings on ECE faculty's capacity for delivering outdoor play pedagogies respond to theme four in the Lawson Foundation discussion paper. They also resonate with ideas related to front-line EYOP program delivery presented elsewhere in this special issue by Perlman, Howe, and Bergeron, as well as by Niblett et al. Taken together, this discourse on capacity for implementing quality EYOP experiences—for children, their teachers, and their teachers' teachers—raises broader questions about Canadians' cultural affinity to and comfort in outdoor environments. The question of adults' (especially educators' and education faculty members') personal dispositions toward outdoor life is one that must be addressed in any exploration of capacity for advancing outdoor play.

In the final paper, titled "Shifting Culture Towards Endorsement and Advocacy of Outdoor Play and Learning: A Collaborative Case Study with KidActive," **Zachary Stevens, Bryan R. Grimwood, Shawna Babcock, and Carly Meissner** also explore the capacity for EYOP delivery, but they shift the focus within the metaphorical ecosystem from people to places and spaces—including the built and natural environments in which EYOP programming is situated. Their study is nested in a participatory research design that engaged affiliates of KidActive in a program evaluation of a three-year Nature Play and Learning Spaces program.

The program involves engaging school communities—students, parents, educators, and community members—in collaborative initiatives to enhance outdoor play and outdoor learning experiences by revitalizing schoolyard space. In addition to physical revitalization using natural and artificial installations, the program also provides pedagogical support for school staff to use the transformed space to facilitate play and learning. The authors assemble the narrative data they collected to create a logic model that maps program inputs, activities, and outputs. As indicated in the title, the most notable finding of the evaluation is that the program catalyzes culture shifts within participating schools, which may elevate outdoor play as a shared community value. Stephens, Grimwood, Babcock, and Meissner's paper exemplifies the ecosystemic approach called for in theme one of the Lawson Foundation discussion paper. It serves as an example of such an approach not only because of its focus on the interaction between people, their spaces, play, and learning, but also because the KidActive Nature Play and Learning Spaces program and its evaluation are examples of cross-sectoral collaborations that advance EYOP.

Viewed as a whole, the papers in this special issue may be seen as one possible "mapping" of the ecosystemic lens on EYOP, which the Lawson Foundation discussion paper calls for in theme one (See p. 1 of the Lawson Foundation's discussion paper for a conceptual map diagram). Individually, each paper takes up one or more of the remaining themes. Notably, however, theme two—on the cruciality of recognizing and integrating Indigenous approaches to EYOP through inclusive engagement with Indigenous peoples—is conspicuously absent from this constellation of papers, except in peripheral ways. As editors, we acknowledge this absence and, drawing on theme one in the Lawson Foundation discussion paper—the importance of adopting a multi-sector ecosystem lens that supports EYOP—we call on stakeholders across the ecosystem to respectfully and intentionally reflect and act on the ways that Indigenous peoples and perspectives are considered and/or included in EYOP-related policy making or programming.

In closing, the editors would like to express our sincere thanks to the Lawson Foundation for their commitment to EYOP as a national and international priority. We are also grateful for their financial support, which backed both the production of this special issue and several of the research projects that are documented herein.

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Are Parental Perceptions of Risk and Attitudes Toward Risk-Taking During Play Associated with Preschoolers' Physical Activity and Physical Literacy?

Michelle R. Stone, Dalhousie University, Natasha Webber, Queen's University, Jane Cawley, Dalhousie University, Natalie E. Houser, University of Saskatchewan, & Sara F.L. Kirk, Dalhousie University, Canada

Abstract

Purpose: *To explore whether parental perceptions of risk and attitudes toward risk-taking during play are associated with preschoolers' physical activity (PA) and physical literacy (PL).* Methods: *Nova Scotia preschoolers (35 boys, 17 girls; mean age = 3.8 years, range = 3–5 years) and parents (n = 52 pairs) provided data. Linear regressions assessed associations of risk perceptions and attitudes with children's PA and PL, controlling for children's age (cross-sectional analysis; $p < 0.05$).* Results: *Perceptions of risk were significantly associated with preschoolers' PA ($r = 0.24$, $p = 0.05$), and predicted 11.6% of the variance in PA. Findings revealed a significant positive relationship between attitudes toward risky play and PL ($r = 0.21$, $p = 0.05$), explaining 14.7% of the variance in PL.* Conclusion: *This evidence supports growing literature on the value of risky play to children's development and parents' influence in risk-taking behaviour.*

Resumé

Objectif : Explorer l'association possible entre, d'une part, les perceptions parentales du risque et l'attitude envers la prise de risques pendant le jeu et, d'autre part, l'activité physique et la littératie physique des enfants d'âge préscolaire. Méthodologie : Les données ont été recueillies auprès d'enfants d'âge préscolaire (35 garçons, 17 filles; âge moyen = 3,8 ans, intervalle = 3 à 5 ans) et de parents (n = 52 paires de parents) de la Nouvelle-Écosse. Par régressions linéaires, on a évalué l'association entre, d'un côté, les perceptions du risque et l'attitude envers la prise de risques et, de l'autre côté, l'activité et la littératie physique chez les enfants en fonction de leur âge (analyse transversale; $p < .05$). Résultats : Il existe un lien significatif entre les perceptions du risque et l'activité physique des enfants d'âge préscolaire ($r = .24$, $p = .05$), qui permettait de prédire 11,6 % de la variance de l'activité physique. Les résultats ont révélé une relation positive significative entre l'attitude envers les risques dans le jeu et la littératie physique ($r = .21$, $p = .05$), ce qui expliquait 14,7 % de la variance au niveau de la littératie physique. Conclusion : Ces données corroborent les études de plus en plus nombreuses sur la valeur de la prise de risques dans le jeu pour le développement des enfants et l'influence des parents sur la tendance des enfants à prendre des risques.

Keywords: children, fundamental movement skills, outdoor, play, risk

Mots clés : enfants, habiletés motrices fondamentales, plein air, jeu, risque

Introduction

The establishment of healthy physical activity (PA) behaviours in early childhood is critical for optimal growth and development (Carson et al., 2017*a*; Timmons et al., 2012). Play, particularly unstructured, self-directed, and/or free play, dominates early childhood and affords children numerous physical, cognitive, and social health benefits (Brussoni, Olsen, Pike, & Sleet, 2012; Pellegrini, 2009). Play is so essential for childhood development that it is recognized in the United Nations Convention on the Rights of the Child (Office of the UN, 1989) and is promoted internationally by organizations such as the International Play Asso-ciation (http://ipaworld.org/).

Outdoor play has particular health benefits for children (Gray et al., 2015) and has been endorsed through a position statement geared toward key influencers of children (e.g., parents, educators, caregivers, media, government) (Tremblay et al., 2015). The position statement on active outdoor play was developed based upon accumulating evidence that children today play outside less than previous generations and that play has become more structured, with indoor time replacing outdoor time (Active Healthy Kids Canada, 2012; Bassett, John, Conger, Fitzhugh, & Coe, 2015; Veitch, Bagley, Ball, & Salmon, 2006). This shift from time spent outdoors to time indoors coincides with increasing rates of childhood chronic disease, low levels of PA, increasing time spent sedentary, and heightened parental concerns about childhood safety (Tremblay et al., 2015). The position statement highlights that the difference between danger and risk must be recognized and that healthy childhood development relies on access to active outdoor play with its associated risks (Tremblay et al., 2015).

Increasing attention has been focused on changing the perception of "risk" as being synonymous with "danger" (Brussoni et al., 2015), differentiating between "risk" and "hazard" (Canadian Public Health Association, 2018), and raising awareness about the necessity of risk-taking during play—particularly in the outdoors—to children's optimal growth and development (Brussoni et al., 2015). Risk, in the context of play, is identified as, "the challenges and uncertainties within the environment that a child can recognize and learn to manage by choosing to encounter them while determining their own limits" (Canadian Public Health Association, 2018, p. 1), with risky play being defined as, "thrilling and exciting forms of play that involve a risk of physical injury" (Sandseter & Kennair, 2011, p. 258). Six types or categories of risky play have been developed based on observational research with children. These are: play at great heights; play at high speed; play with harmful tools; play near dangerous elements; rough and tumble play; play in which there is a chance for disappearing/getting lost (Sandseter, 2007, 2009). Risky play is universal and part of children's normal and healthy development (Sandseter & Kennair, 2011; Brussoni et al., 2015). It mostly takes place during free play, as opposed to adult organized play (Sandseter, 2007). The many positive health benefits of risky, outdoor play—including

greater PA, less sedentary time, and greater social health (e.g., social competence, creativity, and resilience)—have been documented (Brussoni et al., 2015). Moreover, efforts to promote outdoor play, with its risks, are increasing (Tremblay et al., 2015).

Children have an evolutionary need to take risks during play (Brussoni et al., 2015; Sandseter & Kennair, 2011). The non-associative theory (Sandseter & Kennair, 2011) argues that children innately develop fears of certain stimuli (such as heights), which protect them from experiences they are not mature enough to manage. Risky play provides children with exposure to these stimuli, and is associated with pure exhilaration. Through repeated exposures to risky play, children become more sensitized and habituated to stimuli they previously feared. Children enjoy challenges and are motivated by curiosity to explore their environment and experiment with limits. When given opportunities to take risks, children discover, invent, initiate activities, assert themselves, and become independent; they learn through their mistakes and achievements and develop perseverance (Nikiforidou, 2017). These attributes are critical for developing resilience and maintaining optimal health and wellness throughout life. Risk-taking (moving out of comfortable, secure situations) is fundamental to growth (Dweck, 2000) and is a natural part of preschoolers' psychological development (Erickson, 1959). Risky play also provides children with exhilarating positive emotion, which can contribute to optimal mental health.

By taking risks, children learn how to cope with uncertainty and novelty, and they develop a better understanding of their capacities and limitations (Nikiforidou, 2017). Through taking risks in play, children test their physical limits and learn how to avoid or adjust to dangerous environments (Jambor, 1998). As they gain more experience, they develop perceptual motor skills and spatial-orientation abilities. These skills and abilities allow children to master situations that they had previously feared and permit them to take on age-appropriate challenges (Sandseter & Kennair, 2011). Engaging in these challenges helps to build self-confidence, self-awareness, perseverance, resilience, and independence (Sandseter & Kennair, 2011). These physical challenges also contribute to the development of fundamental movement skills (FMS), that is, the basic movements (e.g., running, jumping, catching, throwing, kicking, rolling) that provide a foundation for PA participation and good health throughout the lifespan (Barnett, Van Beurden, Morgan, Brooks, & Beard, 2008; Gallahue, Ozmun, & Goodway, 2012; Jaakkola, Yli-Piipari, Huotari, Watt, & Liukkonen, 2016). FMS are one component of physical literacy: "the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life" (Tremblay et al., 2018). Previous literature suggests that FMS can influence the amount of active play a child will engage in, and that active play also improves FMS development (Johnstone, Hughes, Janssen, & Reilly, 2017), highlighting the bidirectional relationship between the two components.

To advance outdoor play and risk taking in play, it is important to look broadly at the interconnected elements, or ecosystem, that influence children's outdoor play experiences. Some have argued that we have become an excessively risk-averse society (Tremblay et al., 2015), and that increasing safety concerns and regulations have led to restrictions on children's risk-taking during play, which could be limiting children's normal development (Brussoni et al., 2012; Tremblay et al., 2015). The absence of opportunities for outdoor risky play could lead to children's disengagement from PA (Brussoni et al., 2015) and quite possibly adversely affect physical literacy development, given the strong association between physical activity and physical literacy (Barnett et al., 2008). Parental concerns about children's safety have the greatest influence on children's independent play (Tandy, 2002; Valentine & McKendrick, 1997), particularly with regards to traffic hazards and child abduction by strangers. These fears have influenced a shift from active, outdoor, free play to structured activities, many of which often take place indoors (Brussoni et al., 2012). Parents play a crucial role in the early years, acting as a role model to develop and shape their children's PA and sedentary behaviours (Xu, Wen, & Rissel, 2015), and there is evidence to support that parenting styles (e.g., overprotective or hyper-parenting) can negatively impact children's PA (Janssen, 2015) and opportunities for risky play (Cevher-Kalburan & Ivrendi, 2016). Parental beliefs about risk and safety can impact the support and/or encouragement of children's risk-taking (Little, 2010), as well as the response to children's risk-taking behaviours (Backett-Milburn & Harden, 2004).

To date, most of the research on the relationship between parental attitudes toward risky play and children's PA has included school-aged children and youth; very little research has included preschoolers (aged 3 to 5 years). Furthermore, to the authors' knowledge, no study has investigated whether parental perceptions of risk and attitudes toward outdoor, risky play are associated with children's FMS (as one component of physical literacy). Given the established positive relationship between PA and physical literacy, and the evidence that parental safety concerns negatively impact children's PA levels, one might hypothesize that parental perceptions of risk and attitudes toward risk-taking during play would also be associated with children's physical literacy. Therefore, the purpose of the present study is to explore whether parental perceptions of risk and attitudes toward risk-taking during play are associated with PA and PL in a sample of Nova Scotia preschoolers aged 3 to 5 years.

Methods

Participating children and parents were part of a larger project, the Physical Literacy in the Early Years (PLEY) study (Houser et al., 2019), a mixed-methods, randomized controlled trial focused on improving children's physical literacy through the introduction of a "loose parts" (Houser, Roach, Stone, Turner, & Kirk, 2016) intervention into regulated child care centre outdoor environments.

A total of 19 regulated child care centres across Nova Scotia (spread over 240 km) from diverse geographical settings (urban, suburban, rural) took part in the larger PLEY study (see Houser et al., 2019 for study protocol). The study took a staggered approach to the recruitment of child care centres. A general inquiry of interest was sent to regulated child care centres across Nova Scotia that served children between the ages of 3 and 5 years with an enrolment greater than 20 children. A total of 21 sites expressed interest; those meeting eligibility requirements were included in the study (see Houser et al., 2019). Analyses are based on pre-intervention (baseline data) collected from March to July of 2017 (n = 16 centres; cross-sectional analysis). The study was granted ethics approval from Dalhousie University's Research Ethics Board.

All preschoolers (children aged 3 to 5 years) from participating child care centres were invited to take part in the PLEY study. Demographic data including age, sex, and physical characteristics (e.g., height, weight) were taken by trained personnel at child care centres. Height was assessed using a portable stadiometer (SECA, Hamburg, Germany) and taken to the nearest 0.1 cm. Weight was assessed using a digital scale (A&D Medical, Milpitas, CA, USA) and taken to the nearest 0.1 kg. Children's height and weight were measured while children were wearing light clothing and no footwear. The height and weight of each child were used to calculate Body Mass Index (kg/m^2).

Children were asked to wear an accelerometer (ActiGraph wGT3X + ; https://www.actigraphcorp.com/) during waking hours for nine consecutive days. In order to improve compliance and ensure data quality, parents were given an instruction sheet that explained how to attach the accelerometer over their child's right hip and when the device was to be removed (nighttime sleep, bathing/swimming). Parents and educators were also informed of the importance of consistent accelerometer wear to generating information on typical physical activity behaviour. Accelerometer wear and data reduction decisions were based upon previous literature. Accelerometer data were collected in 15s epochs, and non-wear time defined as ≥20 minutes of consecutive zero counts (Carson, Rahman, & Wiebe, 2017*b*). To be included in analyses, children were required to have ≥4 days with ≥6 hours of wear time each day (Hinkley et al., 2012). Sedentary time was defined as ≤100 counts/min, light physical activity (LPA) as 100–1679 counts/min, and MVPA as ≥1680 counts/min (Janssen et al., 2013). Accelerometer data were classified into minutes per day and percentage of day spent sedentary, in LPA, in MVPA, and in activity of any intensity (total PA; TPA). Accelerometer wear (number of days, minutes per day) and steps per day were also calculated.

Children's physical literacy was based on an assessment of FMS, using the Test for Gross Motor Development-3 (TGMD-3; Ulrich, 2016). The TGMD-3 is a validated tool that measures gross motor ability of children aged 3 to 11 years through a qualitative process-oriented approach. Thirteen skills, including seven object control skills (one-hand strike, two-hand strike, dribble, catch, kick, underhand throw, overhand throw) and six locomotor skills (run, hop, gallop,

skip, horizontal jump and slide) were observed. A trained research assistant first demonstrated to the child how to perform the skill correctly. The child was then given one practice trial. This was followed by two test trials, which were scored. Each skill contained multiple performance criteria; these were given a score of "1" if performed correctly or a score of "0" if performed incorrectly. A sum of all locomotor skills (possible score of 70) and object control skills (possible score of 68) was created, along with a total FMS score (possible score of 138).

Parents of participating children were asked to complete a survey, including information on parent demographics, parent and child physical activity participation, parent sedentary behaviour, child sleep, and parent perceptions of their child's physical literacy. Survey questions were created for the purpose of the larger PLEY project (Houser et al., 2019). Parent perceptions concerning the level of risk associated with children's physical activity/play behaviour and attitudes toward risk-taking during play were assessed (Questions #19–22; see Appendix A). The majority of questions were reverse scored so that a higher score reflected a more positive perception of risk and a lower score a more negative perception of risk. A summary score was created for each question.

Descriptive statistics (mean, SD, range, frequencies, and percentages) were used describe: child and parent demographic data; child body composition, physical activity, and physical literacy data; and parent perceptions of risk and attitudes toward risk-taking during play. Linear regression models were used to assess associations of parent perceptions of risk and attitudes toward risk-taking during play with children's PA (Model 1) and physical literacy (Model 2), while controlling for age (child). All statistical analyses were conducted using SPSS (Statistical Package for the Social Sciences, Version 25, IBM, Inc., Chicago, USA). Statistical significance was set at $p < 0.05$.

Results

Complete data were available for a total of 52 matched parent–child pairs (children: boys, n = 35; girls, n = 17). Participant characteristics are provided in Table 1. The average age of participating children was 3.8 years old (SD = ±0.79 years), with 67.3% of the sample being boys. Children wore accelerometers for, on average, 8.8 days (range = 6.0 to 9.0 days); average accelerometer wear time per day was 11.3±4.3 hours. Children spent, on average, 194.0±50.5 minutes per day sedentary, and accumulated 257.7±32.7 minutes of LPA, 223.4±40.9 minutes of MVPA, and 481.1±56.5 minutes of total PA per day. Children were active for the vast majority of their day (71.3% of total wear time), with 38.18% of that time spent in LPA, and 33.15% of that time spent in MVPA; 28.7% of their day was spent sedentary. Children accumulated, on average, 8,186.9±2021.1 steps/day. There was a wide range in locomotor skills scores (range = 5 to 37), object control skills scores (range = 6 to 44), and total FMS scores (range = 14 to 81) (see Table 1).

Characteristics	Mean	SD	Range
Age (years)	3.81	0.79	3.00-5.00
Height (cm)	104.63	6.33	92.60-120.00
Weight (kg)	17.34	2.47	13.60-23.90
BMI (kg/m²)	16.56	1.95	11.83-22.36
Physical activity (accelerometry)			
Sedentary time (min/day)	193.96	50.54	95.22-301.75
Light physical activity (min/day)	257.72	32.71	199.44-356.08
Moderate-vigorous physical activity (min/day)	223.40	40.90	147.47-320.36
Total physical activity (min/day)	481.12	56.50	386.00-651.33
Steps/day	8186.85	2021.06	4470.89-15507.78
Valid days of accelerometry	8.80	0.52	6.00-9.00
Wear time (min/day)	675.08	51.84	553.69-808.86
Sedentary (%)	28.67	6.89	14.03-41.00
Light physical activity (%)	38.18	4.11	29.63-49.46
Moderate-vigorous physical activity (%)	33.15	5.68	21.22-47.53
Total physical activity (%)	71.33	6.89	59.00-85.97
Physical literacy (TGMD-3)			
Locomotor skills score (0-70)	24.46	8.23	5.00-37.00
Object control skills score (0-68)	23.92	8.11	6.00-44.00
Total fundamental movement skills score (0-138)	48.19	14.15	14.00-81.00

Abbreviations: BMI = Body Mass Index; % = % of wear time (note: accelerometers worn during waking hours only)

Table 1. Descriptive statistics for children (n = 52; boys n = 35; girls n = 17)

Parent demographic data, including household structure, ethnicity, level of education, and income, were derived from the parent survey. The structure of almost all families was a "couple with a child/children" (96.2%). Most families were of European descent (84.6%). The majority of parents had obtained a graduate or advanced university degree (59.6%) and had an annual household income of more than $100,000 (69.2%).

Figure 1 illustrates the frequencies of parent responses to Question 19. The vast majority of parents (≥85%) rated most activities (walking, rolling, sliding, running, reaching, swinging) as either not risky at all or somewhat risky. Biking and climbing were perceived to be more risky than other activities (15.4% of parents perceived biking to be "risky," and 13.4% perceived climbing to be "risky" or "very risky") (see Figure 1).

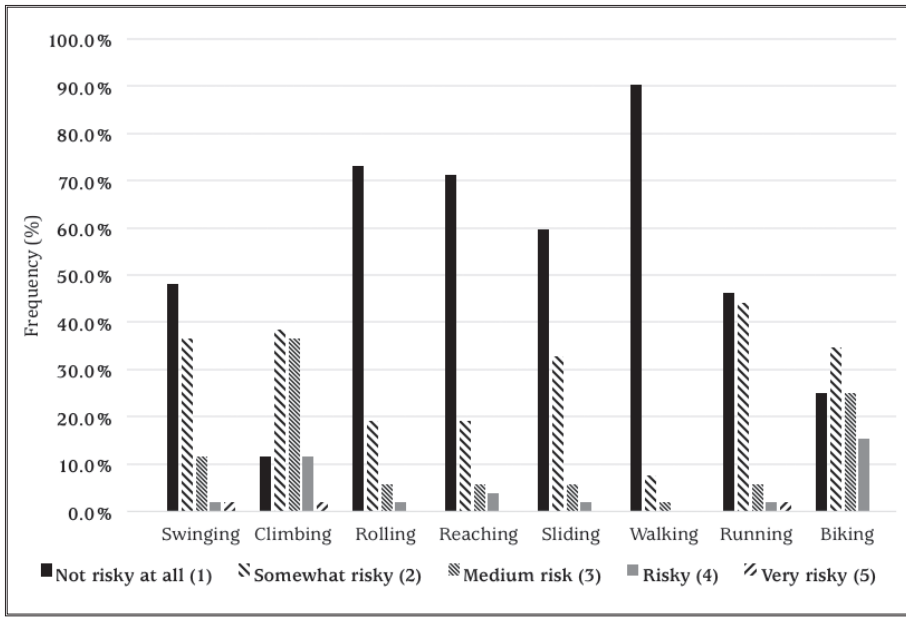
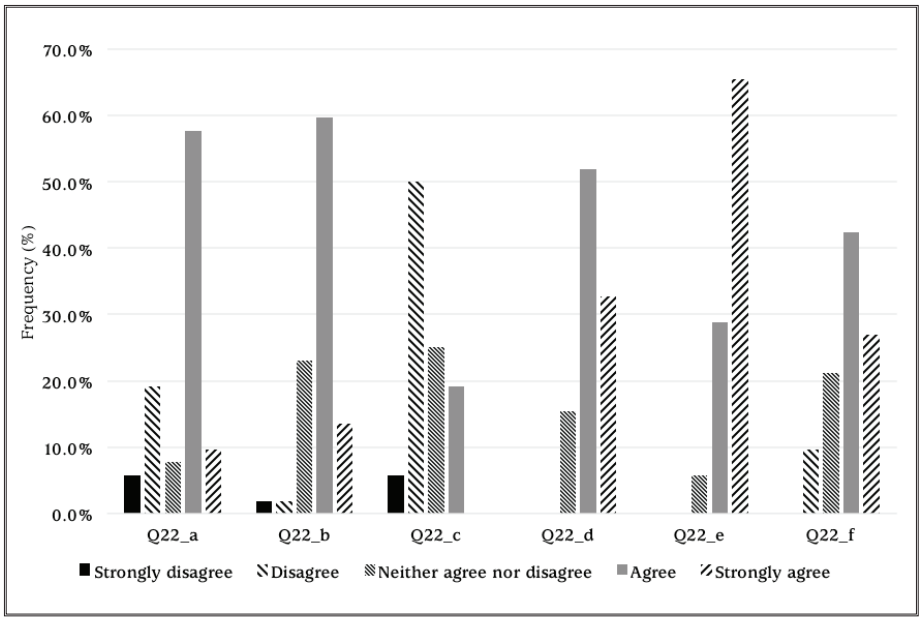


Figure 1. Frequency of parental responses to Question 19 (rating of risk for activities their child participates in).

Question 20 asked parents to rate how much risk influences what activities they allow their child to participate in, from 1 (very little) to 10 (very much). Almost half (46.2%) of parents had a score of 4 or below; the most frequent response was "3" (26.9%). Question 21 asked parents to rate how much risk influences what activities their child chooses to do, from 1 (very little) to 10 (very much). The majority (61.5%) of parents had a score of 4 or below; again, the most frequent response was "3" (25.0%).

Figure 2 illustrates the frequencies of parent responses to Question 22, which asked parents to indicate their level of agreement or disagreement with statements related to attitudes toward risk-taking during play. Most parents (67.3%) agreed or strongly agreed that they permit their child to use equipment and materials in ways other than what they are designed for. Most parents (73.1%) also agreed or strongly agreed that they take their child to places where there are opportunities for risk-taking. Only 19.2% of parents agreed that they limit what their child does out of fear that they might injure themselves. The majority of parents (84.6%) agreed or strongly agreed that risk-taking is an important part of their child's development. Finally, the vast majority (94.2%) of parents encourage their child to play outside in good weather, and 69.2% encourage their child to play outside in rain or snow.



Note: Q22_a = "I permit my child to use equipment and materials in ways other than what they are designed for"; Q22_b = "I take my child to places where there are opportunities for risk-taking"; Q22_c = "I limit what my child does, as I worry that he/she may injure themselves"; Q22_d = "I feel that risk-taking is an important part to my child's development"; Q22_e = "I encourage my child to play outside in good weather"; Q22_f = "I encourage my child to play outside in rain or snow"

Figure 2. Frequency of parental responses to Question 22 (agreement or disagreement with statements related to attitudes toward risk-taking during play).

Direct entry hierarchical regression analyses were performed to examine the association of children's total PA and total FMS score (dependent variables) with, parent perceptions of risk and attitudes toward risk-taking during play, and child demographic data (independent variables). Only those independent variables that were significantly correlated with dependent variables ($p < 0.05$) and/or illustrated a trend for significance ($p < 0.1$) were included in the models. Parental perception of risk for activities their child participates in (Question 19) and age (child) were both significantly correlated with children's total PA ($r = 0.24$, $p = 0.05$; $r = 0.21$, $p = 0.08$, respectively). Parental attitudes toward risk-taking during play (Question 22) and age (child) were significantly associated with children's total FMS score ($r = 0.21$, $p = 0.1$; $r = 0.31$, $p = 0.02$). Each independent variable was entered in one block at a time to determine the unique contribution of the variable to the model.

Dependent variable	Independent variables	B	95% CI (LB, UB)	t	p	Correlations	Partial correlations	r^2 change
Children's total PA (min/day)	Age	0.24	-20.22, 323.51	1.77	0.08	0.21*	0.25	0.04
	Parent risk perception of activities	0.27	0.00, 6.94	2.01	0.05	0.24**	0.28	0.07

Note: **p≦0.05. *p≦0.1. PA = physical activity. CI = confidence interval. LB = lower bound. UB = upper bound.

Table 2. Summary of coefficients, confidence intervals, t-values, p-values, correlations, partial correlations and r2 change for child age, parent perceptions of risk for activities their child participates in (Question 19), and children's physical activity (total PA)

Table 2 illustrates the hierarchical direct entry regression analysis of children's total PA with parent perceptions of risk and child age. This model explained 11.6% of the variance in children's total PA and was statistically significant ($F(2,49) = 3.20$, $p = 0.049$). Age explained 4.3% of the variance, and parental perception of risk for activities their child participates in explained 7.3% of the variance in children's total PA (see Table 2).

Dependent variable	Independent variables	B	95% CI (LB, UB)	t	p	Correlations	Partial correlations	r^2 change
Children's total FMS score	Age	0.32	8.90, 92.90	2.43	0.02	0.31**	0.33	0.10
	Parental attitudes toward risk-taking during play	0.22	-0.19, 2.16	1.68	0.1	0.21*	0.23	0.05

Note: **p≦0.05. *p≦0.1. FMS = fundamental movement skills. CI = confidence interval. LB = lower bound. UB = upper bound.

Table 3. Summary of coefficients, confidence intervals, t-values, p-values, correlations, partial correlations and r2 change for child age, parent attitudes toward risk-taking during play (Question 22), and children's physical literacy (total FMS score)

Table 3 illustrates the results of hierarchical direct entry regression analysis of children's total FMS score with parental attitudes toward risk-taking during play and child age. This model explained 14.7% of the variance in children's total FMS score and was statistically significant ($F(2,49) = 4.22$, $p = 0.020$). Age explained 9.8% of the variance, and parent attitudes toward risk-taking during play explained 4.9% of the variance in children's total FMS score (see Table 3).

Discussion

The purpose of this study was to determine whether parental perceptions of risk and attitudes toward risk-taking during play were associated with preschoolers' PA and physical literacy. While there is evidence that parents' attitudes toward risk-taking during play may influence their children's PA behaviour (Cevher-Kalburan & Ivrendi, al., 2016; Janssen, 2015), there is no evidence to indicate whether parents influence their children's physical literacy by imposing limits on risk-taking during play. Furthermore, previous research exploring relationships of parent risk perceptions and/or attitudes with children's PA has focused on school-aged children and youth, leaving a gap in the understanding of how these perceptions and attitudes relate to the PA behaviour and physical literacy of young children.

The results of this study revealed that parents' perceptions of risk related to children's play-based activities (e.g., swinging, climbing, rolling, reaching, sliding, walking, running, biking) were significantly associated with preschoolers' total PA and predicted (along with child age) 11.6% of the variance in PA behaviour. Lower risk scores were associated with greater levels of PA (inverse relationship). The majority of parents perceived these activities to be of minimal risk, suggesting that they may be more likely to permit and/or encourage their children to engage in these types of activities. Parents may also see the majority of these activities as developmentally appropriate for their children and perceive the benefits (e.g., increases in children's confidence, competence, and enjoyment) as outweighing the risks (e.g., potential injury). Two activities—climbing and biking—were perceived to be more risky than others. A child's ability to ride a bike depends on their balance and coordination. By age 5, children typically have the appropriate balance and coordination to ride a bike without training wheels, yet they might not fully understand the dangers associated with riding a bike at speed, or navigating traffic, which would increase their risk for injury. Consequently, it is not surprising that parents rated biking to be more risky than other play-based activities.

Climbing poses the risk of falling from height, which increases the level of risk for more serious injury and is typically the most commonly restricted type of play (Sandseter & Sando, 2016). Climbing is one of the most fundamental movement skills, improving various physical skills (e.g., balance, hand and foot coordination, agility) and contributing to enhanced spatial and directional

awareness as well as proprioception (body awareness) (Frost, 2013). When children climb, they have to adapt to new and/or unknown environments; they also have to solve problems and make decisions while concentrating on maintaining balance and safety, and they have to develop resiliency (Frost, 2013). Together, these skills enhance a child's overall motor development and provide the foundation to be physically literate and physically active. Gull, Goldstein, and Rosengarten (2017) examined the benefits and risks of tree climbing on child development and resiliency, and considered how parents influenced tree climbing. Parents reported allowing their children to climb trees because of their recognition of the enjoyment and joy it gave their kids, their understanding of the physical benefits (e.g., exercise, balance, strength, proprioception skills, hand–eye coordination, body awareness, dexterity), and their awareness of the emotional benefits (development of confidence, achievement and accomplishment, perseverance, and self-awareness; problem solving, planning and strategizing, decision making, independence, and character building; the understanding of limits, and conquering of fear, the sense of empowerment and perspective taking). The vast majority (82%) of parents agreed or strongly agreed that benefits of tree climbing outweigh the risks. Many parents had common sense guidelines for children to climb, such as testing the physical safety of the tree, letting their child know to "use good judgment" or "pay attention," and having height restrictions; and many parents had no restrictions, trusting their children to know their own body and limits after seeing their skills. Future research is needed to explore the perspectives of Canadian parents on the benefits of climbing, and the facilitators/barriers to supporting this form of outdoor play as a key activity for preschoolers' physical, cognitive, and socio-emotional development (including physical activity and physical literacy).

The present study also found an association between parent attitudes toward risk-taking during play and preschoolers' FMS. More positive attitudes toward risk-taking during play were associated with higher total FMS scores. Most parents (67.3%) agreed or strongly agreed that they permit their child to use equipment and materials in ways other than what they are designed for. This suggests that parents were supportive of child-led play, which is unstructured and has no specific outcome or rules in mind (Houser et al., 2016). Child-led play has been associated with greater physical activity (Houser et al., 2016), and physical activity is important for the development of FMS in the early years (Johnstone et al., 2017). More supportive attitudes toward allowing children to engage with equipment or materials in ways other than they are designed for (e.g., loose parts) (Nicholson, 1971, Houser et al., 2016) could lead to more physically complex and/or demanding play experiences, which could enhance perceptual-motor skill development. Most parents agreed or strongly agreed (73.1%) that they take their child to places where there are opportunities for risk-taking. This suggests that the majority of parents in the sample brought

children to environments where they could engage in risky play. However, there is no indication of how much risky play the parents would actually permit once in these environments, which is a limitation of the study; direct observation would have provided more insight into this. Just 19% of parents agreed that they limit what their child does, as they worry their child might injure themselves, and the majority (85%) agreed or strongly agreed that risk-taking is an important part of their child's development. Together, these findings suggest that the present sample of parents was not very risk-averse and understood that risk-taking is important for their child's development.

While the vast majority (94%) of parents reported that they encourage their child to play outside in good weather, fewer (69%) encouraged their child to play outside in less desirable weather (e.g., rain or snow). Previous research has indicated that poor and/or extreme weather is a barrier to PA in the early years (Hesketh, Lakshman, & van Sluijs, 2017). The misconception that children can get sick while going outside in cold weather, for example, has been cited as one barrier, which, interestingly, has also been voiced by children themselves (e.g., children reporting that their parents don't want them to go outside because of a fear that they will get sick) (Hesketh et al., 2017). Furthermore, prevailing attitudes/policies on weather in child care facilities could influence parents' attitudes (e.g., parents might feel less comfortable in allowing their child outside in poor/extreme weather if this is restricted at the child care centre). Informing parents and educators alike about the widespread benefits of outdoor activity and play, in all weather, and dispelling myths (e.g., increased chance of sickness in rainy weather) is critical for changing societal norms regarding physical activity and play in poor weather.

Strengths

The results presented in this paper provide the first exploration of how parental perceptions of risk and attitudes toward risk-taking during play are associated with preschoolers' physical literacy, revealing a significant positive relationship between parental attitudes toward risk-taking and preschoolers' FMS competence. The finding that parental perceptions of risk was significantly associated with preschoolers' accelerometry-measured physical activity behaviour supports previous literature, indicating that parenting styles (e.g., overprotective or hyper-parenting) can negatively impact children's PA (Janssen, 2015) and opportunities to engage in risky play (Cevher-Kalburan & Ivrendi, 2016). Our findings are strengthened by the use of objective, scientifically validated measures of children's physical activity (ActiGraph wGT3X+ accelerometer) as well as FMS (TGMD-3), a component of physical literacy. Findings are based on baseline data of a randomized, mixed methods, controlled study design, and probability sampling of a moderate sample size of parent-child pairs ($n = 52$).

Limitations

Observed relationships between parental perceptions of risk and children's PA, as well as between attitudes toward risk-taking during play and physical literacy, may have been influenced by the limited diversity of the sample. Most parents in the present study were well-educated, with high annual household incomes and are thus not representative of most Canadian households (Garriguet et al., 2016), which limits the generalizability of results. Most parents were not risk averse and recognized risk-taking as important for their child's development. Certain demographic characteristics of participating parents that may have influenced perceptions of risk and attitudes toward risk-taking during play (e.g., gender) were not recorded, limiting an examination of whether parent perceptions and attitudes varied by gender; this presents an important avenue for future research. Our study is also limited by the use of a survey of parental perceptions of risk and attitudes toward risk-taking during play, which may not directly correlate with actual practices, beliefs, and/or responses to children's risk-taking during play behaviours. Little, Wyver, and Gibson (2011) did find, however, that parents who expressed strong opinions about risk in children's play supported children's exploratory risk in practice, providing encouragement, praise, and physical support, which may suggest that there is little bias in our survey results. Like the present study, parents included in Little et al.'s (2011) study were predominantly from well-educated backgrounds. More research is needed to examine the beliefs of parents from diverse socio-economic and cultural backgrounds and how these factors influence children's opportunities for risk-taking during play.

The present study focused specifically on exploring relationships of parental perceptions of risk and attitudes toward risk-taking during play with children's total physical activity and total fundamental movement skills score, limiting an understanding of whether these perceptions and attitudes are more strongly associated with certain intensities of physical activity (e.g., moderate-vigorous physical activity) or with specific FMS (e.g., running or jumping). Preschoolers' physical literacy was defined as FMS competence, which is only one component of physical literacy. At the time of this study, a validated measurement tool that could adequately capture other components of physical literacy (e.g. motivation and confidence) in preschool-aged children did not exist; progress has been made on this since (Cairney et al., 2018). Future work is needed to examine whether parent perceptions of risk and attitudes toward risk-taking during play are associated with these other components of physical literacy.

Finally, our sample of preschoolers spent the vast majority of their day active, which contradicts previous literature (Chaput et al., 2017); this may limit the generalizability of our findings. All of the children who were part of this study were in regulated child care, where there are requirements for

the amount of physical activity/outdoor time that children receive each day. Moreover, these children were assessed in the spring/summer. Both of these factors could explain these findings.

Conclusion

The findings from the present study contribute to, and build upon, previous literature supporting a relationship between parent attitudes toward risk-taking during play and children's physical activity behaviour. More positive parental attitudes toward risk-taking during play were associated with greater fundamental movement skill competence in preschoolers, a novel finding that extends the literature and signifies the importance of providing young children with opportunities to take risks during play for optimal physical development. Data from a larger, more diverse sample of parents are needed to understand the perspectives of parents who are less risk permissive and less likely to allow children opportunities to take risks during their play, and to understand how these factors relate to young children's physical activity and physical literacy. Future research is needed to tease out the barriers and/or facilitators for providing young Nova Scotia children with opportunities to take risks during play, particularly in the outdoors and in various early years settings (e.g., home, childcare, school, community), using an ecosystems lens approach that addresses multiple interrelated factors. Building relationships among key research, policy, and practice stakeholders in Nova Scotia will allow for collective sharing about and knowledge mobilization around barriers/facilitators of risk-taking during outdoor play, and will provide a mechanism for devising strategies to ensure Nova Scotia children have more opportunities for risky play.

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Conflicts of interest

The authors have no conflicts of interest to report.

Appendix A

Survey Questions

Survey questions on parent perceptions concerning the level of risk associated with children's physical activity/play behaviour and attitudes toward risk-taking during play (from PLEY project parent survey).

Question 19: How risky would you consider each of the following activities for your child to participate in? Rate each of the activities from 1- "not risky at all" to 5- "Very risky"

	Not risky at all				**Very risky**
Swinging	1	2	3	4	5
Climbing	1	2	3	4	5
Rolling	1	2	3	4	5
Reaching	1	2	3	4	5
Sliding	1	2	3	4	5
Walking	1	2	3	4	5
Running	1	2	3	4	5
Biking	1	2	3	4	5

Question 20: On a scale of 1 to 10, how much does risk influence what activities you allow your child to participate in?

Very Little **Very much**

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

Question 21: On a scale of 1 to 10, how much does risk influence what activities your child chooses to do?

Very Little **Very much**

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

Question 22: How much do you agree with each of the following statements about your child?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I permit my child to use equipment and materials in ways other than what they were designed for.	1	2	3	4	5
I take my child to places where there are opportunities for risk-taking.	1	2	3	4	5
I limit what my child does as I worry that he/she may injure themselves	1	2	3	4	5
I feel that risk-taking is an important part to my child's development	1	2	3	4	5
I encourage my child to play outside in good weather	1	2	3	4	5
I encourage my child to play outside in rain or snow	1	2	3	4	5

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Taking it Outside: Engaging in Active, Creative, Outdoor Play with Digital Technology

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Abstract

This 3-year study followed 14 kindergarten classrooms in Ontario as they used open-ended tablet applications to support outdoor play and learning. Through the creation of slideshows that incorporated their photos, video, drawings, and audio recordings, the children explored their physical and creative activities outdoors, as well as their connections to nature. The educators were initially cautious about safety and solitary and sedentary use of the tablets. However, findings illustrated that children used the tablets safely, both individually and collaboratively, in conjunction with outdoor pursuits such as climbing and dramatic play. Rather than undermining the active, social, and nature-focused value of outdoor play, the use of open-ended apps enhanced these aspects by allowing children to attend to, document, and review their outdoor interests and activities.

Resumé

L'étude, échelonnée sur 3 ans, a observé dans 14 classes de maternelle de l'Ontario l'utilisation de tablettes et d'applications ouvertes en soutien au jeu et à l'apprentissage en plein air. Les élèves créaient des diaporamas en y incorporant leurs photos, vidéos, dessins et enregistrements audio, une façon pour eux d'explorer à la fois des activités créatives et physiques en plein air tout en cultivant leur contact avec la nature. Au départ, les éducateurs s'inquiétaient de la sécurité avec les tablettes et craignaient que leur utilisation favorise le jeu solitaire et la sédentarité. Toutefois, selon les conclusions de l'étude, les enfants utilisaient les tablettes de façon sécuritaire, seuls ou à plusieurs, tout en pratiquant des activités extérieures (grimper, jouer à faire semblant, etc.). Plutôt que de diminuer les bienfaits du jeu en plein air que sont l'activité physique, la socialisation et le contact avec la nature, l'utilisation d'applications ouvertes est venue renforcer ces aspects en permettant aux enfants de fixer leur attention sur les activités en plein air, de montrer ce qu'ils aiment faire à l'extérieur, de consigner leurs expériences et de mieux les comprendre.

Keywords: Early Childhood; Outdoor Play; Nature; Digital Technology; Tablet Applications

Mots clés : petite enfance, jeu en plein air, nature, technologie numérique, applications pour tablette

The benefits of outdoor play for children have been well documented, including physical and mental health benefits (e.g., Herrington & Brussoni, 2015). The benefits of digital technology for children's learning and development are less well known, but there is a growing body of research literature illustrating a wide range of benefits (e.g., Radesky, Schumacher & Zuckerman, 2015; McGlynn-Stewart, MacKay, Gouweleeuw, Hobman, Maguire, Mogyorodi, & Ni, 2017a). However, little is known about how digital technology can enhance the benefits of outdoor play for young children.

This three-year research study (2015–2018) examined the use of tablet applications to support young children's (ages 3–6 years) learning and meaning-making in kindergarten programs in Ontario. The open-ended nature of the apps used allowed the children and educators to engage with digital technology in individualized ways that suited the multiple contexts within early learning settings. The multi-modal affordances of the apps permitted children to create drawings, videos, photographs, audio recordings, and/or combinations of these options in ways that captured their curiosity and intensified their interests in learning. Children archived their work for later reflection, assessment, and documentation. This paper focuses on the use of the tablet applications in outdoor settings, looking specifically at two questions: "How do kindergarten educators experience the use of open-ended tablet applications in the outdoors with kindergarten children?" and "How do kindergarten children engage with open-ended tablet applications in the outdoors?"

Literature Review

Although there is a growing body of research supporting digital technology for early learning (e.g., Neumann, 2016; Radesky, Schimacker & Zuckerman, 2015; Wong, 2015; Blagojjevic et al., 2012) and the importance of outdoor play for young children (e.g., Herrington & Brussoni, 2015; World Health Organization, 2012), little research has been conducted on young children's digitally-mediated learning and play in the outdoor environment, particularly where children are creating and curating the content. Digital technologies (DT) continue to emerge and evolve at a rapid rate and have become prevalent in both formal and informal learning environments for young children. DT popular with children aged 3–6 years include computers, tablets (e.g., iPads), and cellphones. Studies that provide insight into how best to support young children as they navigate the digital world are few. When exploring the use of DT with young children, some researchers express conflicting messages: They suggest caution but also celebrate the active, interactive, and inquiry-based learning potential afforded by DT (e.g., Council on Communication and Media, 2016; NAEYC, 2012; Radesky, Schumacher & Zuckerman, 2015). Evidence about the learning potential of open-ended iPad apps in early learning environments is becoming more prevalent in the literature (e.g., Fleer, 2014; Roswell & Harwood, 2015; McGlynn-Stewart,

Braithwaite, Hobman, Maguire, Mogyorodi, & Park, 2017b). There is growing evidence that educators can use DT to support students as they learn to question, construct theories, and develop skills to foster active global citizenship (Wimmer, Skramstad, & Khan, 2012). In fact, recent research has shown that intellectually challenging screen activities can benefit cognition (Walsh, Barnes, Cameron, Goldfield, Chaput, Gunnell, Ledoux, Zemek, & Tremblay, 2018).

In addition to cognitive benefits, social relationships between children and adults can be strengthened through warm and intentional interactions while using technology (McClure, Shentsove-Dutton, Barr, Holochwost & Parrott, 2015). When children and adults use interactive technology together, there can be great opportunity for learning and bonding (Radesky, Schumacher & Zuckerman, 2015). Technology can also help strengthen the bonds between children and their peers (McClure et al., 2015; McGlynn-Stewart, Brathwaite, Hobman, Maguire, & Mogyorodi, 2018) and, when used in social ways, contribute to improved communication skills (Lavigne, Hanson & Anderson, 2015). Additionally, DT can be seen as a creative tool that children can use to explore and express themselves in varied and multiple ways (Mitchell, 2007) as they seamlessly move between imaginative and concrete worlds—what Fleer (2014) refers to as "flickering" (p. 203).

However, most research investigating children's use of DT has been focused on the use of technology indoors (e.g., Falloon & Khoo, 2014; Roswell, 2017). The few existing studies that have explored DT and children's outdoor play and learning have focused on adults' use of DT to measure children's physical activity (Herrington & Brussoni, 2015; Truelove, Bruijns, Vanderloo, O'Brien, Johnson & Tucker, 2018; Vanderloo & Tucker, 2017) rather than on children's use of it to explore and document their interests, activities, and interactions with the outdoor environment. Prominent authorities (e.g., Canadian Pediatric Society, 2017; U.S. Department of Education, 2016) recommend that DT, when used outdoors, should be employed in ways that are interactive, promote children's interests and expand their explorations of nature and the surrounding environment.

Research clearly illustrates the benefits of outdoor play for young children. Opportunities to develop meaningful relationships with nature during early childhood are thought to promote lasting motivation to engage with natural environments (NAAEE, 2010). When young children's play occurs in natural spaces, it can foster varied types of self-motivated play experiences that promote physical and developmental growth (Herrington & Brussoni, 2015). Managing their play allows children to develop self-regulation skills that can support them as they navigate their options and make decisions (Gray, 2013). Furthermore, child-directed play can foster creativity, confidence, and adaptability (Farmer et al., 2017; Robson & Rowe, 2012).

Despite the documented benefits of self-directed outdoor play, western societal views have normalized the idea of children being in need of protection or less capable than they are (James & Prout, 1997; Mayall, 2000). This may create instances where professional concerns about safety (Sandseter & Sando,

2016) cause educators, who are typically supportive of child-directed pursuits, to create barriers that keep children from making their own play decisions outdoors. When DT is introduced into the outdoor learning environment, these concerns may be magnified. Furthermore, the purposeful and appropriate incorporation of DT into early learning classrooms requires teachers to be skilled in areas such as technical aspects of operating DT, incorporating DT into classroom routines, recognizing what DT learning looks like, and teaching with DT. However, there are very few pre-service or in-service professional learning opportunities on these and related subjects. Further complicating the issue is that the principles of constructivist learning, so familiar to early childhood professionals, are mostly absent from the multitude of mobile applications claiming to have educational value (Goodwin & Highfield, 2012). Open-ended apps—those that allow and encourage children's creative input—are relatively rare. This leaves many early childhood professionals feeling uncertain about the role of DT in their classrooms (Beschorner & Hutchison, 2013). Educators require better support at both pre-service and in-service levels so that they can face the challenges and opportunities of integrating DT in their programs in meaningful ways.

The research literature reports on the many potential benefits of both digital technology and outdoor play for young children. The present research study focussed on the largely unexplored intersection of child-led play with open-ended DT in outdoor environments.

Methodology

This study used a qualitative, case-based research approach, as defined by Merriam (2009) and Punch (2009). The study involved an in-depth examination of a modest sample of teachers. The interviews, focus groups, and observations were largely open-ended, and the themes emerged as the study progressed. The transcripts and observation data were read several times to identify themes, or "codes", related to the research questions. The researchers then developed a table of themes matched to participants and, going through the materials again, recorded where a reference was made to each topic. This table was then used to develop a structure for the report. The emerging themes were continually modified through "constant comparison" (Glaser, 1992) with the data.

This study followed 27 educators in 14 kindergarten classrooms (approx. 300 children aged 3–6) over the course of three school years, 2015–2018. The educators were interviewed and surveyed at the beginning and end of each school year, and they participated in focus groups and workshops on emerging issues in the spring of each year. The educators had not received any professional development on the use of DT in the classroom prior to the study, but they all reported using computers, iPads, and cellphones in their personal lives. The research team provided tutorials on using the iPad apps during the workshops. Each classroom was given three iPads for the children to use. The research team

provided pedagogical and technical support during the school year through biweekly classroom visits, and it made observations during these visits. The interviews were tape-recorded and transcribed. While all of the educators were asked the same questions, probe questions were also used, and additional comments were encouraged. Samples of their kindergarten students' digital slideshows (created on iPads, using the applications 30Hands or Explain Everything) were collected and analyzed.

Findings

Analysis of the data led to several key findings. The educators had concerns that taking the iPads outdoors might detract from the benefits of outdoor play, and they were also concerned about the safety of both the devices and the children. After the educators and the children had increased their proficiency in the use of the iPad apps, and following the establishment of some broad guidelines on outdoor use, the educators began to see a variety of benefits to using DT outdoors. They began to see that the iPad apps provided opportunities for creativity, an enhanced connection with the outdoor world, and motivation to engage in literacy activities.

Educators' Concerns Over the Use of Digital Technology Outdoors

An examination of the educators' interview and focus group comments over the course of the three-year study, as well as an in-depth look at their students' slideshows, revealed that the use of DT in the outdoors increased and intensified over time. Moreover, we saw a marked change in educators' perceptions of the value of children using DT in the outdoor environment. At the beginning of the study, most of the educators questioned whether DT belonged outside and whether it would interfere with the children's learning and safety. In particular, the educators worried that DT would interfere with the active and social nature of outdoor play. Over time, as they witnessed what the children were doing, many came to see the value of DT for learning and for social engagement.

In the pre-implementation interviews, most of the educators either agreed or strongly agreed that using open-ended apps fit in with their idea of "best practice" in kindergarten; yet, when it came to using the devices outdoors, they appeared to be conflicted. Many of the educators expressed concern that the children would be too sedentary and solitary if the devices were readily available during outdoor time. For example, one educator's comment in an interview in the study's first year demonstrated their feeling that using an iPad is incompatible with exercise and socializing:

> Maybe it will take away from other types of play and social interactions. If they're always on an iPad or something like that, when are they going to go outside and get exercise? When are they going to be socializing and making friends? (Educator, Year 1)

Worries such as these led the educators to create rules for outdoor DT use that did not exist when the devices were being used indoors. For example, in some classrooms, children could only use the iPads outdoors if they were standing up; in others, the iPads were only taken outside occasionally. Some educators initially reported that children were indeed being too sedentary while using the iPads outdoors. We addressed these concerns in a workshop in the first year by introducing three guiding principles suggested by Ballentine (n.d.): focus on apps and digital activities that tell stories (e.g., use video, photography, and audio to document experiences); put the real world first (e.g., use apps/activities that enrich the outdoor experience rather than obscure or detract from it); and require movement to be part of the experience. These guiding principles proved to be useful as the educators facilitated their students' use of the iPads outdoors.

In addition to worries about the potential for the iPads to encourage the children to be sedentary and solitary, the educators worried about the safety of both the children and the devices when children were using DT outdoors. The educators voiced concerns that the children might be harmed in some way while using the iPads outdoors (e.g., falling while climbing with a device in hand, getting cold hands if they removed their mittens). They were also concerned about the increased risk of damage to devices that were taken outdoors. While there had been some initial worries about children taking devices near sand or water tables indoors, these fears were not borne out in the early stages of the study, and the educators quickly came to value the flexibility, mobility, and autonomy afforded by these devices indoors. However, in outdoor environments, the educators were more focused on the cost and fragility of the devices. All of these concerns led to restrictions on iPad use related to climbing structures, weather conditions, frequency of use, and children's independent use of the devices.

The Benefits of Digital Technology in the Outdoors: Getting Physical

Three key areas in which digital technology enhanced the outdoor learning experience for the kindergarten children were as follows: physical activity; creative activity; and connections to nature. The children's indoor learning experiences were also enriched by their use of the digital documentation that they created outdoors.

In spite of the educators' initial concerns, the study results indicated that the children's use of DT outdoors encouraged them to practise and enhance their physical skills. For example, the iPads inspired the children to create and videotape dance and gymnastic routines on the playground. After performing and taping their routines, the children would view their recordings and then keep adapting their routines until they were satisfied with the results. One educator reported on her surprise and pleasure at how the use of DT had increased her students' level of physical activity, cooperation, and sustained interest in an activity while playing outdoors: "They were on the monkey bars shooting

a music video. It was interesting how they wanted to cooperate while being outdoors. And now they are doing a dance competition. A lot of them have been practising" (Educator, Year 1).

Early in the study, when the children were less familiar with the apps, they were more likely to be sedentary while they focused on experimenting with the technology. However, once they had more experience, they became more active and engaged with the world around them while using the iPads. As a result of witnessing the early tendency to be sedentary while exploring the apps outdoors, the researchers suggested that the educators wait until the children were comfortable using the apps indoors before taking the iPads outside. We also suggested that they have a conversation with the children about active ways to use the iPads. At the educators' request, the research team created tip sheets about how to encourage active use of the technology in the outdoors. When these practices were in place, the iPads accompanied active physical play rather than replacing it. In fact, DT added value to physical play because it allowed children to reflect on their recorded physical activity, which at times inspired them to re-enact or refine their activity. The recorded activities also added value for the educators. The children's slideshows served as documentation of the children's interests and abilities, which the educators could then use for planning and assessment purposes.

Exploring and Showcasing Creativity

Once the children had had time to engage with the apps and become familiar with their basic functionality, their use of DT during outdoor play was more intentional, collaborative, and creative. Children used the apps' photo and video capabilities to record a wide range of creative activities. In one memorable dramatic play episode, a child combined typical dramatic play (pretending to have an adventure in an imagined landscape) with the creation of a video that was clearly intended for a future audience. In the video, she speaks directly to a future viewer, narrating as she walks in a wooded part of the school playground. As she walks and records the scene ahead of her, she imagines that she is in a "scary" and "creepy" forest. She uses a dramatic voice to draw the viewer in and set the scene, and she ends with a rhetorical question: "We're walking straight. Here's a hill in this dark creepy forest mountain. Look how scary and creepy it is in this forest (deep breath). How much walking do we have to do?" (Kindergarten student, Year 3). In another class, a group of children who were using car tires to play "house" on the playground created a video in which they explained that the tires were their toilets, identifying which "toilet" belonged to which child.

In addition to dramatic play episodes, the children photographed or videotaped structures and patterns they made with snow, building blocks, and other manufactured or natural materials. At times, the children planned to document their creations from the beginning; at other times, they decided to videotape or

photograph their creation after it was completed. Children engaging in creative play outdoors has, on it own, rich learning potential; however, the study showed that there are added learning benefits to children creating and then viewing their own and others' recordings of their creative endeavours. These activities enrich the outdoor experiences because they encourage dialogue, reflection, and further creative activities. Furthermore, the study demonstrated that when the children viewed their world through the iPads' camera lenses, they were offered opportunities to gain different perspectives while they explored their environment. For example, one child, who had recently lost her mother, took a picture of the sky and wrote the words "I love you sky" on the photo. She then recorded herself singing a song to accompany her slide. DT provided an opportunity for this child to express and record her feelings about her mother (whom she thought of as being up in the sky, in heaven) and gave her educators insight into her coping strategies.

Exploring and Connecting to the Outdoor Environment

Children used the apps outdoors as a self-directed means to document their natural environment and capture their personal interests in nature. They documented visuals of plants, insects, animals, and the weather, and they also audio-recorded natural sounds, such as rustling leaves. This documentation was brought back inside for reflection by the children and the educators. The children's documentation created a window into their interests and thinking about nature. For example, one educator suggested that the children use the iPad apps to document signs of spring. She remarked on how viewing the children's perspectives of spring, demonstrated in their photos and videos, had enlarged her own ideas of what could constitute a sign of spring. For example, she said about one photo: "I would have never thought about a piece of feather on the ground as part of spring, so it was really interesting" (Educator, Year 2). Another educator remarked on how taking and reflecting on photographs encouraged the children to engage more deeply with the nature around them and facilitated discussions of nature when back inside the classroom:

> When they've taken pictures of nature outside, I feel like it's something that they might not appreciate as much just by seeing it, because it's captured in the picture, all of a sudden it becomes something more meaningful. Like, they've taken pictures of trees and that's something that they see every day, right? But then it's captured in a picture, and they're able to say "oh look at this" or "this is how the tree is" and we're able to engage in a lot of different conversations. (Educator, Year 2)

In addition to offering opportunities to notice, think about, and discuss aspects of nature, the iPad apps allowed the children to express their feelings about nature. For example, one child used the video function of the app to first pan up the trunk of a tall tree, all the way to the top, and then to pan around to the surrounding trees in the school yard. As she manoeuvred the iPad, she

said, "We are loving the beautiful trees that are changing colours. These are the beautifulest trees that they have in the neighbourhood and the entire world!" (Kindergarten student, Year 2).

The following case study of one of the kindergarten classrooms participating in the present study gives a detailed picture of how the educators transitioned, as a result of what they had witnessed, from feeling concern about the use of DT outdoors to recognizing its wide-ranging learning potential.

Digital Slideshow Analysis: Exploring Two Outdoor Books

Jaya and Carolyn had been team-teaching kindergarten for three years before the project began. Prior the study, these two educators had an iPad and digital camera that they used in the classroom for documenting the children's work, but their students had had limited experience with using educational iPad apps themselves. Although Jaya and Carolyn didn't express their concerns to us in the early years of the study, at the end of the study they revealed that they had been initially concerned for the safety of the three iPads that we had provided for the children to use. However, over the course of the three years of the study, their fears were not realized, and they became very comfortable with the children's independent use of the devices:

> The first year I worried, but that wore off in time. (Carolyn, Year 3)
> There was a time three years ago when we realized, "Why are they giving us these [iPads] to four-year-olds?" I'll be honest. For me, my daughter was four years old and I didn't even let her touch my phone. How are we going to give these kids these apps? So do we follow them around when they pick them up? What if it drops? Those kinds of things start coming to your mind. But now after three years we are at this stage that we say "Yup, go use it and put it back." So the transition from that part of the continuum to this part of the continuum—yes it took a couple of years, doing away with those mental blocks. (Jaya, Year 3)

Jaya and Carolyn were initially much more comfortable using the iPad apps indoors than outdoors. In the classroom, they had the iPads available to the children during open-ended play times and were impressed with the range of learning outcomes that they witnessed in terms of oral, written, visual, and digital literacy. Before they took the iPads outdoors for the first time, they did not speak to the children about how they could or should use the devices during outdoor play. They were concerned when they observed the children beginning to sit and engage in the type of drawing or other activities that were not directly related to outdoor pursuits. Jaya explained:

> Last year we tried to take the iPads during the outdoor exploration. So what the kids did was they would sit by the wall outside and do the iPad, or work on the iPad and their physical activity or the exploration time was like nil. (Jaya, Year 3)

As a result, Carolyn and Jaya began to have the children take the iPads outside less frequently. In the third year of the project, the children initiated two exciting outdoor collaborative projects, mediated by the iPad apps, that changed the educators' perception of the potential for DT in the outdoors. One was a nature book, and the other was a road sign book.

The Nature Book

Jaya described how the nature book project began:

> This year one of the students asked us, "Can I take the iPad outside to take nature pictures?" So we discussed about that in a big circle, "What do you mean by nature pictures? Is it just taking the iPad and running around? Is it just taking the iPad and sitting under a tree and just chatting with your friends?" So we actually discussed that taking nature pictures [means] that you are taking pictures of the flowers, plants, of the changes that you're seeing, or if there is anything you want to see close-up. You can see tiny things, it's like a magnifying glass. So they did amazing things and we actually made a nature book in our classroom. (Jaya, Year 3)

With this child-initiated goal of taking nature pictures, and after having a class discussion of what such a project could look like, the educators no longer witnessed the sedentary behaviour that had worried them earlier. When describing how the child initiated the project, Carolyn said, "It was completely her idea. She did it with a friend. She wasn't sitting down. She was constantly looking for things to take pictures of" (Carolyn, Year 3). This first child inspired others to join her, and soon they had a considerable collection of nature photos on their classroom iPads. One of the children began a trend of manoeuvring the iPad within its green rubber protective case so that the case could be seen at the edges of the photos, creating a framing effect. Other children soon followed suit, and many of the pictures in their digital portfolio had green "frames." When describing this technique, Carolyn said, "He intentionally did that. He is very creative with his photos" (Carolyn, Year 3).

Having the opportunity to take the iPads outdoors motivated the children to closely examine the natural world around them, focus on specific aspects of nature, and capture images to bring back into the classroom for reflection and discussion. This led to two important opportunities for learning—one related to literacy and one to environmental education. The children—"even the reluctant readers who didn't want to write" (Jaya, Year 3)—decided to add writing to each of their photos and to create a book. The creation of the book led to a wider discussion about their responsibility to protect nature:

> So they wrote about it and they talked so much about it and then it led to the discussion about how we need to save nature or how we need to save the planet. It was like a trail of things. We went from one step to another step. (Jaya, Year 3)

The Traffic Sign Book

The second book that the children created using the iPad apps also began with a desire to examine and capture aspects of the outdoor environment. In this case, it was the built environment they were interested in—specifically, road signs—rather than the natural environment. As with the previous book, DT motivated the children to explore the outdoors, capture images of interest, and bring their learning back to the classroom for continued reflection and insights The educators had taken the children on a series of neighbourhood walks and had explained how road signs help keep us safe. The children began to take pictures of the road signs with the iPads. Once they were back in the classroom, they began searching for additional images of road signs on the child-friendly search function within the 30Hands app. After incorporating the images of road signs into a digital slideshow, they drew them on paper to create a collaborative paper book. The educators remarked on how motivating this "real world" cooperative project was, particularly for a group of children who were usually reluctant to read and write:

> We've just found that with the reluctant writers, like this group who are making signs, I cannot explain to you how many pages of signs we have in our sign book. Not only are they drawing the signs but there are using so many signs which say words. They are actually reading "Do not enter," "One way," "No parking," "No smoking." This is the first part of literacy, reading the signs. That's how my daughter learned. (Jaya, Year 3)

In both of the spontaneous, collaborative book projects in this classroom, having access to the iPad apps outdoors enabled the children to become more engaged and knowledgeable about the natural and built environment in their neighbourhood. These authentic leaning experiences provided exciting and meaningful opportunities to practise key literacy skills while enriching their knowledge of, and connection to, the world around them.

Discussion and Conclusion

This research study was limited by a modest sample (27 educators in 14 kindergarten classrooms), albeit with a significant timeline (3 years). However, it led to the following conclusions, which are presented for consideration, ongoing debate, and further research. The results of this study suggest that children's use of DT can be consistent with the goals of outdoor play: It can promote and enhance physical activity, support social and creative approaches to learning, and connect children to the outdoors. Open-ended tablet apps allow children to document and reflect on the outdoors in active, playful, personal, and self-directed ways. By encouraging children to use open-ended apps to observe, document, and reflect on the natural world, educators can help children to focus on elements and processes in nature that may otherwise escape their notice. For

example, the singular lens of a tablet's camera offers a point of view that provides the user with opportunities to capture and preserve unique perspectives (Maguire, 2017). Furthermore, children can use photographs to represent what they know about their own contexts (Dockett & Perry, 2005).

Educators may be nervous that DT will undermine the goals of outdoor play and create safety issues. However, in this study, children engaged actively and playfully with the technology outdoors, and it is interesting to note that no harm came to either the children or the devices during the three years of the study. The findings suggest that, with time and support, educators can come to see the value of DT not only for children's outdoor play but also for their own understanding of children's knowledge and interests. It is important to note that these promising findings occurred under certain conditions: The apps that were used were open-ended; the children were given large blocks of time to play outdoors with interesting structures and materials, and with access to natural elements; the children had sufficient time and scaffolding to become comfortable and proficient with the apps; and the educators established broad guidelines for outdoor use to keep the focus on active, social play. Furthermore, the research team supported the educators regularly as they became comfortable with having DT in their programs. We believe that these conditions were significant factors that led to the wide-ranging and engaged use of DT in the outdoor environment that occurred.

The marrying of digitally-mediated learning and environmental learning may seem an unusual juxtaposition; however, when used in open-ended ways, this study suggests that DT can enhance children's outdoor learning experiences, create opportunities for them to connect meaningfully with nature, and support their literacy development. Both environmental awareness and literacy are critical areas for children's growth, and the results of this study illustrate that they can both be supported by digital technology. Furthermore, educators can use children's digital documentation in order to gain insights into their students' thinking that will help them plan engaging, effective learning experiences.

Notes on Contributors

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How and Why Did Outdoor Play Become a Central Focus of Scottish Early Learning and Care Policy

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Abstract

Based on a government document review, 25 stakeholder interviews, and 7 site visits, we examined how and why outdoor play became a focus of Scottish policy for early learning and care programs; we also documented opportunities and barriers to policy implementation. The outdoor play emphasis began as a bottom-up initiative, with a few early adopters serving as model programs. Perceptions that outdoor play programs were of higher quality than traditional indoor nursery programs helped alleviate concerns about children's well-being, and elicited support from key policy actors promoting the policy. An innovative licensing body that shifted from a risk assessment to a risk/benefit approach was key in developing this policy. A number of barriers to implementation, such as parent and educator attitudes, were identified. Solutions to these barriers and the implications of our findings are discussed.

Resumé

Comment et pourquoi le jeu en plein air est-il devenu un élément central de la politique écossaise encadrant les programmes de garde et d'apprentissage des jeunes enfants? Nous avons examiné cette question en analysant des documents gouvernementaux et en réalisant 25 entrevues auprès de parties prenantes, ainsi que 7 visites dans différents établissements. Ce faisant, nous avons aussi relevé les incitatifs et obstacles à l'implantation d'une politique de ce type. Cette importance accordée au jeu en plein air est une initiative qui vient de la base et les premiers adeptes de cette approche ont servi de programmes modèles. Les programmes de jeu en plein air sont perçus comme étant de meilleure qualité que les programmes habituels de garderie à l'intérieur, ce qui aide à lever les inquiétudes quant au bien-être des enfants et a permis de bénéficier du soutien des principaux acteurs politiques. Un organisme d'attribution des permis a décidé d'innover et de passer d'une simple évaluation des risques à une évaluation à la fois des risques et des avantages; son rôle a été essentiel dans l'élaboration de la politique. Différents obstacles à la mise en œuvre, notamment l'attitude des parents et des éducateurs, ont été relevés. L'article présente des solutions pour surmonter ces obstacles, ainsi que les implications des résultats obtenus.

Keywords: outdoor play, forest kindergarten, early learning and care, outdoor play programs, early adopters of outdoor play

Mots clés : jeu en plein air, maternelle en forêt, garde et apprentissage des jeunes enfants, programmes de jeu en plein air, premiers adeptes du jeu en plein air

How and Why Did Outdoor Play Become a Central Focus of Scottish Early Learning and Care Policy?

In 2016, the Scottish government made the policy decision to increase the number of free hours of early learning and care (ELC) services for 3- and 4-year-olds from 620 to 1,140 hours annually by 2020. The goal was to provide further support for working parents and to enhance ELC experiences for young children. An increased emphasis on early learning and outdoor play was a critical element of this policy. There is a long tradition of outdoor play programs (OPPs) in Northern Europe, which are associated with positive outcomes for children in terms of their physical health and activity, social development, and interest in nature (e.g., Brussoni et al., 2015; Fjørtoft, 2001; Lerstrup & van den Bosch, 2017).

In Scotland, the first OPP was licensed in 2008 by the Care Inspectorate, who are responsible for licensing programs. This marked the beginning of a movement to create high quality opportunities for children to explore the natural world, referred to as Outdoor Nurseries in Scotland. The purpose of the current case study was to investigate how and why outdoor play in the form of Outdoor Nurseries became a focus of Scottish policy for ELC programs, as well as to examine the perceived advantages and barriers to the implementation of this policy. In keeping with work by Passy, Bentsen, Gary, and Ho (2019), we examine whether the policy development followed a bottom-up or top-down approach. Our paper includes a review of government policy documents, information gathered during site visits of OPPs in Scotland, and interviews with key stakeholders.

Places for Children Versus Children's Spaces: A Rationale for Outdoor Play

In the past decade or so, educators have become increasingly interested in the kind of learning that may occur outside of the school classroom, a movement that is sometimes called place-based education. Waite (2013) discusses how children come to understand these outdoor spaces and how these spaces afford opportunities for learning that may or may not align with educational curriculum and pedagogy. In this vein, Rasmussen (2004) distinguishes between spaces *for* children designed by adults, such as typical early childhood settings (e.g., child care centres or nurseries), and *children's spaces.* The latter are informal spaces that enable children to establish a deep connection to the specific environment where the program is located—to use it as they wish so as to meet their own learning and exploration needs (Änggård, 2010; Brown & Kaye, 2017; Waite, 2013). Children ascribe meaning to the spaces that they define through significant social experiences with other children. OPPs are play-based programs that allow youngsters to explore and define their own experiences with the natural environment alongside other children and educators. Educators are responsible for integrating the curriculum into the natural environment through additional

materials (e.g., songs, games, books, tools), while children also engage as young scientists to learn about the natural world. Elliot and Krusekopf (2017) articulate five pedagogical principles for developing OPPs: (1) making deep connections with nature, (2) recognizing the environment is another teacher, (3) including collaborative learning as part of a community, (4) promoting mental and physical well-being, and (5) emphasizing local and traditional knowledge. The benefits of implementing these curriculum-based OPPs are highlighted in numerous studies, which report that outdoor learning contributes positively to children's quality of life (Malone & Waite, 2016), social development, and attitudes towards academic pursuits (Scrutton, 2014). These studies further suggest that a lack of access to outdoor learning stifles children's quality of life, well-being, creativity, and physical health (Malone & Waite, 2016). Taken together, these findings indicate that OPPs hold promise as children's spaces, rather than as spaces for children.

Outdoor Play Programs (OPPs)

Forest kindergartens/schools first appeared in Northern Europe in the 1950s and 1960s; the movement spread to the United Kingdom, Australia, New Zealand, and Canada (Änggård, 2010; Borge, Nordhagen, & Lie, 2003; Brown & Kaye, 2017; MacEachren, 2013; O'Brien & Murray, 2007). Forest kindergarten/nursery programs focus on the early years, whereas forest schools are designed for school-aged children. These programs typically follow a socio-constructivist philosophy (e.g., MacEachren, 2013) and facilitate children's meaningful physical actions and social interactions to enhance their development (Brussoni et al., 2015; Lerstrup & van den Bosch, 2017). In Scotland, Outdoor Nurseries operate in conjunction with local forestry/parklands agencies, third-sector agencies/charities, local authorities, or national organizations (Care Inspectorate, 2016).

In the Scandinavian tradition, forest kindergartens/schools are organized for children to spend significant amounts of time outside (e.g., two hours daily to full days), year-round, and regardless of weather (Änggård, 2010). Some programs have access to an indoor facility (e.g., tent, yurt) for quieter activities and to escape extreme weather conditions (Änggård, 2010; Elliott & Chancellor, 2014). OPPs are situated in woodlands, parks, beaches, botanical gardens, or fields where children are free to explore, investigate the flora and fauna, play, and create their own structures for social or more solitary engagement (Schäffer & Kistemann, 2012). Through analyses of the interviews, on-site visits, and review of government documents, we explored how closely the existing Scottish OPPs follow a play-based curriculum.

Research on the Benefits and Risks of OPPs

A number of benefits are ascribed to OPPs that may enhance children's physical, motor, social, cognitive, and scientific skills. Compared to children enrolled

in traditional preschool programs, research supports the positive benefits of forest kindergartens/schools. In particular, a number of studies highlight the positive benefits of enhancing physical health, such increased activity level and reduced illness (Brussoni et al., 2015; Fjørtoft, 2001; Söderström et al., 2013). Participation in OPPs also facilitates physical and motor skills, such as coordination (Fjørtoft, 2001; Schäffer & Kistemann, 2012; Tandon, Saelens, Zhou, & Christakis, 2018). Other studies indicate that children attending OPPs develop stronger connections to the natural environment, while their social skills, such as self-confidence, increase (Elliott & Chancellor, 2014; Melhuus, 2012).

Outdoor play is sometimes labelled "risky play" (Brussoni et al., 2015; Sandseter & Sando, 2016). Brussoni et al. (2015) define risky play as a situation where the child can recognize and assess an action and decide what to do. In addition, Brussoni et al. (2015) differentiate between "risk" from "danger". From the child's point of view, risky play is "thrilling and exciting" but it may involve physical injury. OPPs present challenges associated with children's desires to climb heights (e.g., trees), move quickly and hide in dense environments, use tools (e.g., saws), and play near dangerous elements (e.g., water) (Coe, 2017). To manage these risks, educators establish rules for safe engagement with the environment and address potential hazards—which trees are strong enough and how high to climb, for example (Sandseter & Sando, 2016). Brussoni et al. (2015) conducted a systematic review and concluded that there were greater physical health benefits when children could engage in risky play compared to when risky environments were avoided.

Yet, concerns about children's safety and risk-taking is a prominent societal theme (Brussoni, Olsen, Pike, & Sleet, 2012). The issue can be framed as risk assessment, that is, documenting the degree of risk and taking overly protective measures to eliminate risk. Or, the issue can be framed as risk/benefit analyses, namely identifying potential risks and the degree of safety measures required to avoid excessive harm (Brussoni et al., 2015). Helping children determine the level of risk and engage in safe behaviours involving some degree of risk is fundamental to the risk/benefit approach (Brussoni et al., 2012). This allows children to learn how to assess risk and their own willingness to approach new challenges. This approach to risky play is one of the foundational elements of OPPs and the adventure playground movement (Brussoni et al., 2012); thus, we addressed risk issues in the key stakeholder interviews.

Scottish Context for Promoting Early Learning and Care and OPPs

The Scottish national government's concerns about obesity rates and the increasing amount of time children are inactive indoors (leading to what they refer to as a nature deficit) led the government to rethink the importance of the outdoor ELC environment (Mathias, 2018). Mathias reported that 14% of Scottish children were obese or overweight compared to the European Union

average of 5% of children; further, Scottish children topped the list for hours of screen time in a World Health Survey. An additional concern was closing the educational attainment gap between children from disadvantaged and advantaged backgrounds (*A Blueprint for 2020: The Expansion of Early Learning and Childcare in Scotland*, 2017). Together, these factors led the National government to propose a radical shift in its priorities: to promote ELC with an emphasis on outdoor play.

The Present Study

The present study is a case study in which we address two questions. First, how and why did outdoor play in the form of Outdoor Nurseries become a focus of Scottish policy for ELC programs? Second, what are the perceived opportunities and barriers to the implementation of this policy? To answer these questions, we conducted a review of government documents, visited seven outdoor nursery programs, and interviewed key stakeholders, including individuals from local authorities, national and municipal governments, Scottish Forestry, advocates, and nursery educators.

Method

Participants

With scheduling assistance from Inspiring Scotland (a registered charity for improving young people's futures), semi-structured interviews were conducted by the first two authors at 16 locations, with 25 key stakeholders involved in developing and delivering ELC programs and policy. Nine interviewees were from the government (municipal, local authorities, and national departments), 12 were educators and program supervisors from 7 OPPs, and 4 were key influencers/advocates from foundations and training institutions. All study protocols were approved by the Research Ethics Boards at the University of Toronto and Concordia University.

Document Review

Internet searches of Scottish government websites identified key policy documents. Advocacy groups and key informants also identified relevant documents.

Site Visits

The first two authors visited seven outdoor play programs (three rural, four urban) across Scotland, serving a range of children from middle- and low-income families. Rural programs were located in woodlands and fields, while the

urban programs were in city parks and playgrounds. To document and describe the OPPs, the researchers photographed the physical environment, took extensive notes, and collected printed/website materials provided by the programs that described their curriculum. We also asked the educators questions about how they used space to deliver the program. Information about the different programs was also collected from the Care Inspectorate/licensing information on their website.

Interviews with Key Stakeholders and Thematic Coding

The semi-structured interviews focussed on understanding the rationale for the adoption of outdoor play as a component of the national ELC policy and identifying potential concerns surrounding implementation, barriers, and opportunities. The audio-taped interviews lasted approximately 90 minutes. One Research Assistant (RA) transcribed the audio-tape verbatim, while the second RA verified the transcription. Discrepancies were discussed until reaching a consensus. Based on the literature review and feedback from the researchers, we developed a preliminary theme-based coding system. Transcripts were analyzed using this preliminary coding system, and refinements were developed with the two first authors. This iterative process was repeated until no new themes/codes emerged. The final coding system identified seven key themes (See Table 1 for themes and frequencies). Transcripts were subsequently coded independently by the two RAs for the seven key themes. Coding discrepancies were resolved through group discussion until reaching consensus.

Theme	Times mentioned	Number of speakers
Heterogeneity	70	22
Policy	33	17
Quality	34	11
Risk	38	17
Role of educators	38	14
Barriers	85	23
Why now?	24	13

Table 1. *Frequencies for Key Themes*

Results

Document Review

Key Scottish government policy documents that outline national expectations for education and play opened the door to OPPs, such as the *Curriculum for Excellence 3* (Scottish Government, 2008), the *National Care Standards: Early Education and Care up to the Age of 16* (Scottish Government, 2008), and the *Play Strategy for Scotland: Our Vision* (Scottish Government, 2013). For example, in keeping with the principles of the UN Convention on the Rights of Children, the *Play Strategy* document advocated that all children require daily, stimulating, high-quality outdoor play in natural environments. Other important documents available on the Care Inspectorate website include *Scotland's Play Ranger Toolkit* (Inspiring Scotland, 2014)*; The Play Return: A Review of the Wider Impact of Play Initiatives* (Gill, 2014); *Managing Risk in Play Provision: An Implementation Guide* (Ball, Gill, & Spiegal, 2012)*;* and the *Scottish Regulators' Strategic Code of Practice* (Scottish Government, 2015).

In 2016, the National government decided to invest heavily in ELC (Scottish Government, 2017). All 3- and 4-year-olds as well as 2-year-olds from disadvantaged families would be eligible to receive 1,140 hours of free care annually by 2020, nearly doubling the current 620 hours. This mandate for ELC was guided by four principles: quality, flexibility, accessibility, and affordability. In a series of Action Plans, the National government set out to ensure high-quality services, support delivery partners (e.g., public, private, third sector), develop the ELC workforce, create a service model to enhance capacity, funding, and infrastructure, and emphasize outdoor play in natural environments.

In line with the expansion to support the outdoor play movement, the Care Inspectorate published *My World Outdoors* (Care Inspectorate, 2016), a colourful, reader-friendly resource guide highlighting vignettes from existing OPPs. The guide highlights innovative practices, settings (city parks, beaches, woodlands), and principles, using the lens of the SHANARRI philosophy. SHANARRI stands for safe, healthy, achieving, nurtured, active, respected, responsible, and included. *My World Outdoors* outlines Care Inspectorate expectations, statements on risky play, best practices, programs, and further resources. More recently, *Space to Grow* was released by the Scottish government (2017) to showcase services that allow the free movement of children from indoors to outdoors. *Out to Play* (Scottish Government, 2018) provides practical advice for developing OPPs. These documents track the evaluation of the Scottish government's growing shift away from risk aversion and toward requiring greater opportunities for outdoor play for children. For example, the document*, My World Outdoors*, states that the Care Commission (forerunner of the Care Inspectorate) came "to appreciate that the benefits [of outdoor play] outweighed the risks and delivered positive outcomes for children attending" OPPs (Care Inspectorate, 2016, p. 9). Together, these

documents reveal an evolution over this period toward curricula that embrace an enriched, flexible, and coherent approach that supports outdoor play.

OPP Characteristics	Frequency (%)
Location	
Urban	4 (57.14)
Rural	3 (42.86)
Auspice	
Private sector	1 (14.29)
Public sector	0 (0.00)
Third sector	5 (71.43)
Other	1 (14.29)
Number of children	
0–19	0 (0.00)
20–29	3 (42.86)
30–39	2 (28.57)
More than 40	1 (14.29)
N/A	1 (14.29)

Table 2. *Descriptive Statistics of Outdoor Play Programs (N = 7)*

Site Visits

The site visits revealed heterogeneity in the OPPs' physical characteristics (see Table 2). One rural site consisted of a very large, flat, fenced space that essentially functioned like a large outdoor classroom with various "centres," such as a mud kitchen and reading area. It also had an adjacent, wilder natural area that children and educators could access. By contrast, one urban site was a fenced, "risky" playground where children could climb, build using adult tools, and engage in water play. This site also provided nearby nurseries with trained educators to support children's outdoor play experiences. In a third model, children either walked or were bussed from their nursery program to a nearby urban park. This public space required children and educators to learn how to manage various risks, such as off-leash dogs and strangers. In another urban OPP, educators conducted a park sweep to remove broken bottles, garbage, and other risky materials before taking children out for the day. The models that involved transporting children to a public space required educators to bring

materials with them, such as portable toilets. This heterogeneity has important implications for the kinds of experiences children have and the work required of educators to make the program function.

Interviews – Thematic Analysis

Theme 1: Heterogeneity of programs. Four subthemes emerged regarding the diversity of OPPs.

1a. Number of days per week children attend OPPs. Some programs (and parents) enrol children for one or two days a week, whereas children are enrolled in other care programs for two to four days per week. Interviewees reported that full-week OPPs exist, but very few children are enrolled for five days: *"nobody . . . [was] going 5 days a week outdoors. It was too much. Most children, were going for maybe a couple of days, some were going for three"* (Government/Advocate 1). The most commonly reported outdoor play structure was a blend, where parents send their children to an OPP for two days a week and either keep them at home or enrol them in a traditional nursery program for the remainder of the week.

1b. Structure of the day. Interviewees mentioned different models of time per day allocated for outdoor play, ranging from full-day (typical of OPPs running one to two days per week) to half-day programs. One potential model described by Government/Advocate 2 suggested that children would be dropped off in the outdoor space (e.g., park) and *"will spend a half day or a full day at the forest."*

1c. Location. Local and city parks were often cited as OPP spaces; participants highlighted the importance of using these freely available, public spaces to promote continued use of the natural environment for families on an ongoing basis. As one participant noted:

> *We do 6–12 weeks in a particular school with a particular class and we take them out once a week into a green space that is close to the school, we try to make it close to the school so that it's walkable and sustainable so hopefully you show the school how they can use the little bit of woodland that's on their doorstep that they've never been to.* (Educator 1)

Fields and dedicated woodlands were also discussed, while other nurseries had on-site outdoor spaces: *"We're lucky that we've got a dedicated site here that we can use, we have a long-term lease of the woodland from this estate so that is for us to use for our activities"* (Educator 1).

1d. Transportation to site. Walking was often mentioned as ideal because it is sustainable and promotes use of local spaces, whereas other models involve parents dropping children off directly at the park entrance. Bussing children from the nursery to an outdoor space appeared to be a somewhat controversial but nevertheless realistic option for some programs. Although this method of transportation allows for greater flexibility in the amount of time spent outdoors, concerns were raised about its long-term cost and environmental sustainability:

> *They chose a very nice park and then they went to the nurseries schools and bussed them in. I think year 1 saw a £60,000 bill in hired charges for coaches and buses. And that's not sustainable and it's not environmentally sustainable. You need kids to understand their local community, be able to walk and access things rather than being bussed.* (Government/Advocate 3)

As noted in the subthemes, OPPs function in a variety of ways in terms of location and access, hours of operation, and child attendance. This diversity is advocated in government documents promoting the adoption of OPPs as part of Scotland's ELC policy, such as *My World Outdoors* (Care Inspectorate, 2016).

Theme 2: Policy. This theme focussed on factors influencing the development of the Scottish ELC policy and how it facilitated a greater emphasis on outdoor play. Four subthemes emerged.

2a. Importance of leadership roles. Several interviewees mentioned that it was critical to have people in leadership roles who were interested in outdoor play. Government/Advocate 3 noted, *"When John Swinney got his role as the Education Minister, he created what was classed as the International Advisors to Education… and a couple of them…completely defer to the Scandinavian model of using the natural environment to support health or being an educational attainment."*

2b. Importance of international and local models. The role of international models was highlighted, even while participants also noted that Scottish models were important to show different stakeholders what was possible. Government/Advocate 4 expressed this view: *"We're scaling out something that pre-exists. This is a much, much stronger position because if you were trying to do something that was completely new, it's a harder road to travel."*

2c. Play and the curriculum. The importance of embedding outdoor play in the national curriculum was raised by Educator 1: *"In the Curriculum for Excellence, which is the current curriculum in Scotland, there's definitely very much encouragement to use the outdoors… There are guidance documents from Education Scotland on using the curriculum in the outdoors, so it's definitely being encouraged."*

2d. Emphasis on child health and well-being. Scotland faces a number of serious concerns about children's physical and mental health. As Government/Advocate 5 commented, *"our role was basically to demonstrate how…forests and the outdoors can also deliver on health and education."*

Thus, in sum, policy makers, policy documents, and the emergence of early adopters of OPPs were key in shaping the emphasis on outdoor play in Scotland's overall ELC policy.

Theme 3: Quality of children's experiences. Program quality issues were coded into three subthemes.

3a. Ensuring quality of children's experiences as part of expansion. There was recognition that quality is a central criterion in the expansion of services. This is illustrated by the following quote: *"So that's a challenge…because the main criteria for the expansion is quality"* (Government/Advocate 6).

3b. Outdoor programs provide children with better quality experiences. Some interviewees argued that OPPs are better quality than indoor nurseries: *"when we started looking at quality as part of the ELC expansion and the focus on looking at quality as the main policy driver for the expansion, then outdoor learning experience… as part of that pedagogical approach came across as a very strong focus"* (Government/Advocate 7).

3c. Being outdoors does not guarantee that children will have good experiences. Other participants were more cautious in their assessment of OPP quality: *"You can take kids outside but it doesn't necessarily mean that they're getting a good experience. They'll be playing, they'll be learning through play maybe but it could be enhanced and so that's what forest school hopefully provides, that additional level of learning and enjoyment and everything that comes of it"* (Educator 1).

Together, the comments in the subthemes illustrate concerns about the quality of children's experiences as Scotland's ELC system undergoes this major change, with the role of outdoor play being somewhat unclear in terms of the types of experiences offered to children.

Theme 4: Risk. Risks for children, risk assessment, and risk/benefit analysis were raised in three subthemes.

4a. Shift from risk analysis to a risk/benefit analysis. The presence of this shift by government, educators, and children, is illustrated by this comment: *"One of the lessons that came…was about the risk benefit analysis, about shifting towards a risk benefit analysis rather than just a risk analysis"* (Government/Advocate 5).

4b. Exposure to risk is helpful to children. Participants argued that it was beneficial to allow children to experience and assess risk: *"The problem with [minimizing risk] then is that they don't know how to manage their own risk"* (Educator 1). Government/Advocate 8 argued: *"There was this massive risk averse society that we were in… in the early days of forest schools, ministers [were] just loving the fact that kids were learning about risk in a positive way…because … they're falling, they're learning how to fall, all this sort of thing."*

4c. Insurance issues. Difficulties in obtaining insurance and how this constrains activities were raised. Educator 2 stated: *"We have a few [rules]; they are not allowed to climb higher than 6 feet, that's in our insurance."*

In sum, discussion of risk is clearly important as Scotland increases the amount of outdoor play that is part of its ELC services, a theme also noted in the literature (Brussoni et al., 2015).

Theme 5: Role of the educator – "Children at the centre." The play-based and child-directed view of outdoor ELC emerged in four subthemes.

5a. Child-led. As clearly explained by Educator 3: *"The important thing is that since it's child-led and child-directed just starting from where the child is now, not where you want or expect them to be, you plan in the moment… It's very much about the child's pace, the child's own time."*

Other educators talked about providing materials to provoke children's learning by asking questions, considering options, and experimenting:

> *For example, we made a tinfoil river so we brought up tinfoil and everything we do, we have lots of discussion around it so, do you think we would be able to put water into this tinfoil and you're getting the kids thinking about that, "maybe, I'm not sure". Well how could we make it so sturdy that it would take water. We then made several layers and we made a river. They were involved in building that river, then we added water, and then we said to them, what can we do with this? Well you can float things, you can sink things. Then we had a discussion about what would float and what would sink.* (Educator 4).

By contrast, other educators assumed more of an observer role. As Educator 3 described: *"Have you heard of SOUL? Stand back, observe, understand, listen. It's the kind of practice that is encouraged by practitioners in the outdoor program."* These educators allowed the children to engage freely with one another and the environment, but they may have missed opportunities for enhancing children's learning.

5b. Play-based curriculum. Following the *Curriculum for Excellence*, the programs' philosophies were play-based and cross-curricular, as articulated by Government/Advocate 9:

> It fits perfectly with our model for our pedagogical approach in Scotland, which is child-led, play-based learning, so the outdoors gives children much more space to… explore, go and experience it, and to get creative.

Some educators engaged in minimal, flexible, and moment-to-moment planning of activities, and they provided some materials, such as books, magnifying glasses, chalk, and natural items (e.g., story stones with letters or numbers). Educator 5 spoke about some items (e.g., diggers and wheelbarrows) as "bridging" the indoors and outdoors in drawing children into the natural environment.

5c. Role of the natural environment. Educators imbued the natural environment with positive attributes and perceived it as a source of creativity and imagination, as well a free space for making decisions:

> *Children are "captivated" by outdoors and need less adult attention outside* (Educator 6). *We just let nature be. It's got everything that they need. Their surroundings have everything to challenge them, to fuel their imaginative play* (Educator 2).

5d. Outdoor play is different than indoor play. A common subtheme was that outdoor learning and play differ from what happens indoors:

> *A different environment and different way of teaching…there's science experiences and outcomes…each activity is a cross curricular thing…it doesn't have to be "now we're doing an exercise in literacy." There's lots of story telling and by the fire we can make up stories.* (Educator 1)

This view was echoed by Government/Advocate 9: *"So, it seems to lend itself, actually, even better than an indoor environment to the children learning and finding something that captures their imagination."*

In sum, the role of educators was key in creating play-based, child-led experiences in natural, outdoor environments when implementing the national *Curriculum for Excellence*. In addition, the notion that the outdoors afforded different kinds of learning opportunities than the indoors was raised by a number of stakeholders.

Theme 6: Barriers. The issue of barriers and ways to address barriers was raised frequently; six subthemes emerged.

6a. Parents. A variety of issues were raised, including parents' attitudes and concerns about the weather (i.e., cold, rain), dirt, sickness, clothing, and risk. The lack of experience of the current generation of parents with outdoor play was exemplified by the following comment: *"They [parents] had no experience of play outdoors the way I had as a child. So they were all like, but they'll get dirty, they might hurt themselves"* (Government/Advocate 1). As Educator 7 noted, one way to address this barrier is *"selling"* the benefits of the outdoor experience to families as a normal part of life. Some programs supported by city councils or charities have received funding to purchase suitable outdoor clothing and boots for the children and staff, which has alleviated some parental concerns and helped children to "become comfortable" with the outdoors (Educator 4).

6b. Children. Educators discussed children's personal preferences about outdoor play and the natural environment. For example, Educator 4 said: *"I think some children don't particularly like being outdoors, they don't like the rough and tumble, being out and some children prefer an indoor learning environment."* However, other participants indicated that, with experience, children generally develop positive attitudes about OPPs.

6c. Educators. Educators play a crucial role and must be mentally fit, resilient, and willing to work outdoors in all kinds of weather, year-round, in this physically demanding job. Most programs have access to a shelter to escape inclement weather and for rest periods. Educator attitudes and training for developing a stimulating, play-based curriculum was identified as an issue. For example, Government/Advocate 10 stated: *"the existing staff members who were traditionally trained, they found it quite hard to engage….and having …this unstructured [environment] really hard to place themselves within."* Lack of knowledge about the natural environment can be a barrier for attracting staff because of the *"the fear factor coming from the lack of knowledge of what the natural world is"* (Government/Advocate 3). One way to address this barrier will be for college educator training programs to enhance their offerings to support the new ELC agenda.

6d. Weather. Scotland has a long, wet, chilly winter and short summers, so proper clothing and equipment are mandatory in addition to being one way to deal with the weather. The weather brings other challenges. For example:

> *We get a lot of rain and…little insects called midges, which…can make it absolutely awful… I think it's about having the right equipment to be able to get outdoors and be comfortable, and not only for the children but for the practitioners.* (Government/Advocate 11).

6e. Systemic issues. Participants identified the following as systemic issues: barriers associated with the workforce, funding, the expansion of the number of hours of free care for families to 1,140, the lack of sufficient childcare spaces and infrastructure, maintaining program quality, and the bureaucracy of the Care Inspectorate. As one participant identified:

> *The Scottish government has made its commitment to start paying everybody a living wage. It's a real problem for the expansion. The commitment to go to 1,140 by 2020, it will be dependent on expanding the workforce, expanding the places, building more nurseries.* (Government/Advocate 2)

The inequity between salaries and funding available for public (local authorities, city councils), private, and third-sector agencies/charities programs was also highlighted. Public programs pay higher wages, and thus the private and third-sector programs have trouble attracting and keeping staff. Further, infrastructure needs for more buildings with appropriate outdoor spaces—even in city centres—was a challenge:

> *architects and property people here are historically used to not investing in outdoor space, first thing they get to cut when the budget runs out, so it's just tarmac, so getting them to the point, this is a registered space and is actually as valuable as indoor space.* (Government/Advocate 4)

The shift in culture of the Care Inspectorate as discussed in the Document Review was mentioned, although it was noted that some inspectors are still not very comfortable with outdoor nurseries.

6f. Social class issues. Participants explained that OPPs are viewed as *"middle class"* (Educator 6) and that the *"families least likely to take up the service are those most disadvantaged families who could actually benefit the greatest"* (Government/Advocate 1). Further, participants exhibited a desire for OPPs to be *"considered the norm so everyone benefits from it. Otherwise, there's a risk that it actually opens up the outcome gap a little bit"* (Government/Advocate 9). Social class issues cut both ways: for disadvantaged children, *"coming home in dirty clothes, which sounds silly but for families whose kids wear the same clothes every single day, it's a real consideration."* By comparison, middle class parents who buy expensive clothing do not want children *"coming home in their nice car in dirty nice clothes"* (Government/Advocate 7).

Thus, a number of barriers to the successful implementation of Scotland's outdoor play policy were identified, specifically related to parental concerns, child preferences, educator training and resilience, the weather, and systemic and social class issues. Some issues can be resolved more easily than others, as discussed later.

Theme 7: Why Now? The final theme that emerged from participants' reflections on the timing and reasons for the change in social policy included three subthemes.

7a. Societal concerns. Obesity, mental health, physical activity, the attainment gap, screen time, a lack of outdoor play, and connection to the natural environment were commonly mentioned. Given the large rural population of Scotland, the loss of connection to the natural environment was highlighted by Government/Advocate 11:

> *There's a genuine concern around young people's mental health and well-being…. there's an understanding there that the environment is hugely important to support health and well-being…. to be connected to the natural world, you know there's that grounding for you there, how it does make you feel better.*

Finally, the National government's concerns with the attainment gap between advantaged and disadvantaged children was voiced by several interviewees: *"a strong push on attainment and closing the attainment gap which is deprivation so that the current administration is, in a range of ways, not just around this, (but) looking at how"* (Government/Advocate 12).

7b. Research. Research on the benefits of unstructured outdoor play and physical activity conducted in Scandinavia, Britain generally, and Scotland specifically, were important as a driving force for the social policy agenda. As one participant noted:

> *Scottish government have got a commitment, an ambition that Scotland is the best place in the world to grow up. There was a gentleman called Sir Harry Barnes, that was 10 years ago, he was Chief Medical Officer, and he had done research that showed the impact of your early childhood experience had on your longer life chances….Following that, there was research from the "Growing up in Scotland" report which said the quality of your Early Learning and Childcare placement based on the Care Inspectorate's grade, had a relevance to how you performed in school…the government wants to put money in at the earliest point in order to support those children when they go to school and then through life.* (Government/Advocate 6)

7c. New opportunities. Participants stated that the ELC agenda and focus on outdoor play provided new opportunities to build stronger families and communities. As Educator 8, working in an inner-city, low-income neighbourhood service commented, the *"new emphasis on early learning and care and outdoor play is a way to build better communities."* This view was echoed by an educator working in a rural program who said: *"It's very much about Scottish people feeling connected with their place and their place in Scotland and nature, essentially"* (Educator 5).

Many participants raised the issue of the lack of sufficient infrastructure to house the expected increase in numbers of children and number of hours of annual free care. Expanding OPPs was seen as one solution to this problem, as Government/Advocate 10 stated: *"It's less costly to have outdoor provision*

because you don't have the build to consider. We're lucky in [city] we have many parks, lots of green space." Also, the expansion of OPPs afford opportunities for a range of professionals (e.g., architects, health) and government agencies, such as Scottish Forestry, to rethink existing spaces and take advantage of urban parks, woodlands, and spaces in rural communities.

In sum, participants' comments regarding theme 7 highlighted concerns about the health and well-being of the Scottish population. They also underscored that the move toward expanding OPPs was based on empirical research evidence and that this move opened up new opportunities for families, communities, and professionals.

Discussion

The current focus on ELC and outdoor play is a prominent agenda of the Scottish National government and is seen as one solution for concerns about child well-being and alleviating physical space constraints. The National government is pushing a coherent agenda, which is set in the context of other government mandates, such as the *Curriculum for Excellence*. Initially, the OPP movement was a front-line initiative of the early adopters of OPPs. These demonstration sites have been central in promoting the new agenda because people from different walks of life, including politicians, can see a high-quality OPP in operation and can understand how OPPs may be excellent sites for promoting children's early learning and care. Thus, the commitment to OPPs in Scotland began as a grassroots, bottom-up process. The documents reviewed as part of this study revealed a movement toward flexible, child-centred programs that opened the door to the growth of OPPs. In fact, several educators referred to the *Curriculum for Excellence* and showed us documentation books regarding how they addressed the learning expectations and outcomes for their children. This illustrated the dovetailing of changes in policy and the practices of the early adopters that together set the stage for the central role played by OPPs in Scotland's ELC policy.

Data on program quality presented in a Care Inspectorate report (Mathais, 2018) showed that the quality ratings of 18 early adopters were higher than the average for the rest of the country. This finding was central in advancing the goal of increasing outdoor play programs in Scotland. Consistent with this, several interviewees argued that OPPs provide children with better learning opportunities, as noted, for example, in theme 5d. This perception seems to have been instrumental in the uptake in interest in outdoor play shown by the Scottish government, suggesting that what began as a bottom-up movement was met, at least partway, by a top-down, government-led policy agenda. This is in keeping with recommendations for positive implementation of OPPs outlined by Passy et al. (2019). However, it is worth noting that as of 2018, using Care Inspectorate ratings (Care Inspectorate, 2015), early adopters had similar

scores to those of the general population of programs in Scotland. The lack of difference in ratings suggests that OPPs are now comparable to the general population of providers in Scotland, based on the criteria currently used by the Care Inspectorate.

While there was cautious excitement about the national ELC agenda, interviewees raised a number of challenges to be addressed in the short, mid-, and long term. They argued that there has to be flexibility in how outdoor play programs are delivered. The programs we visited were indicative of a number of possible delivery models; they were designed to meet the needs of the local communities as recommended by Waite (2013). Full-time OPPs are not attractive for most children, parents, and educators, but they are desirable on a part-time basis, in conjunction with other child care arrangements. Nevertheless, our interviewees argued that while the flexible delivery of a variety of different types of programs is a positive aspect of the new agenda, OPPs cannot alone solve the physical space issue that is looming due to the increased number of hours of free care that will be available for families.

Other challenges that were discussed included funding/cost issues related to creating new buildings/spaces and salary inequities across different programs. Lack of trained educators was a major issue for staffing OPPs and for the training colleges who must ramp up their curriculum. Further, not all trained educators have the desire, skills, or experience to work in OPPs; thus, attracting staff was raised as a key issue.

Maintaining and enhancing the quality of children's experiences within these programs was raised as a concern, especially given the speed of the expansion of free hours of care. Discussion of quality was used to argue for the move to OPPs because they were thought to be of better quality by some stakeholders. The issue of quality was also raised to demonstrate a concern about moving towards OPPs (will they be of high enough quality?). There may be lessons to be learned from the Quebec expansion to $5/day care, where the risk of trading access for quality was documented (Japel, Tremblay, & Côté, 2005; Lefebvre, 2004).

Risk was a major issue raised in many interviews. In keeping with work by Brussoni et al. (2015), it appears that there was a willingness by many of the participants in our study to shift from a risk analysis to a risk/benefit analysis. The extent to which parents are ready to make this transition is less clear. Nonetheless, in Scotland, it appears that many practitioners, insurance companies, and the Care Inspectorate have made this shift. These findings point to a number of key policy recommendations.

Policy Recommendations

- This policy analysis suggests that Scotland can serve as an example of how an ELC licensing body can show flexibility and tolerance to risk if it is perceived to be in the best interests of children and families. It also illustrates

the value of government meeting a bottom-up process partway in an effort to alleviate concerns about the well-being of its population.

- Consistent with findings by Passy et al. (2019), our results highlight the need to ensure that adequate resources in terms of both time and money are provided to train educators about how to deliver outdoor play programs.
- Flexibility is required in how OPPs are developed with attention to the needs of the local communities and the ways to employ the different types of spaces so as to afford children and families a deeper connection to the natural environment. These programs should be attuned to the aims of the *Curriculum for Excellence*, while ensuring that the aims complement and not negate the experiences of children, as outlined by Waite (2013).
- Given the many barriers that were raised in this study and the fact that children generally do not attend existing programs on a full-time basis, designing a variety of OPP options that enable part-time engagement with these programs is likely to be key to the success of Scotland's outdoor play policy.
- Helping parents understand the benefits of outdoor play and a risk/benefit approach to OPPs will bring parents on-board. The cooperation of public, private, and third-sector agencies/charities in this matter will be essential.

Limitations and Conclusion

Our case study has several limitations, including a qualitative analysis of a limited number of interviews. The voices of educators not working in an OPP are not represented, nor are the voices of parents and children. Despite these limitations, this study sheds some light on how and why OPPs became a focus of Scottish policy for ELC programs as well as on the perceived advantages and barriers to the implementation of this policy. In conclusion, OPPs alone cannot achieve the worthy goals of Scotland's ELC agenda, but are best viewed as one critical component. Nevertheless, the case study provides an interesting picture of how one small country can create a rich, research-based national agenda with the ultimate goal of addressing some pressing social, health, and educational problems. Despite all the complexities associated with Scotland's initiative, it is clearly a fascinating naturalistic experiment that warrants further attention from researchers and policy makers around the globe.

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Declaration of Interests Statement

The authors have no competing financial and/or non-financial conflicts of interest.

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Partnering for Outdoor Play: A Case Study of Forest and Nature School Programming in the Context of Licensed Child Care in Ottawa, Ontario

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Abstract

This case study examines the policy significance of a partnership between two organizations committed to improving children's learning and well-being through the delivery of a forest and nature school (FNS) program offered in the context of a licensed childcare program in the province of Ontario, Canada. The notion of the Anthropocene is taken as a theory and practice framework which emphasizes the urgency for developing new educational strategies that respond to the current moment of ecological crisis facing human and more-than-human planetary communities on earth. Methodologically, the case study is taken up through the lens of action research, wherein the leaders of the two partnering organizations participated as co-investigators of the project. Thematic findings of the study suggest that best-practice policy in early years FNS programs broadly include, among others, the following: understanding a continuum of FNS pedagogies, working to influence regulatory disconnections between built and natural play environments, and advancing social and ecological justice values through FNS programs.

Resumé

Cette étude de cas examine l'importance stratégique d'un partenariat entre deux organisations vouées à l'amélioration de l'apprentissage et du bien-être des enfants par la prestation d'un programme d'école en forêt et en nature offert dans le contexte d'un programme de garderie agréée en Ontario, au Canada. La notion d'Anthropocène sert de cadre théorique et pratique pour souligner l'urgence de mettre en place de nouvelles stratégies éducatives qui s'adaptent à ce moment crucial de crise écologique pour l'être humain et les autres espèces qui peuplent la terre. Côté méthodologie, l'étude de cas est réalisée en recherche-action, les dirigeants des deux organisations partenaires participant au projet à titre de co-chercheurs. Les résultats thématiques de l'étude suggèrent qu'une bonne stratégie pour des programmes d'école en forêt et en nature pour la petite enfance devrait miser principalement sur les éléments suivants : comprendre que les approches pédagogiques de l'école en forêt et en nature forment un continuum, travailler à aplanir les différences réglementaires existant entre les environnements de jeu naturels et artificiels, faire progresser les valeurs de justice sociale et écologique grâce aux programmes d'école en forêt et en nature.

Keywords: forest and nature school, early years education, outdoor play, licensed childcare

Mots clés : école en forêt ou en nature, éducation de la petite enfance, jeu en plein air, garderie agréée

Introduction

The purpose of the case study is to examine the policy significance of a partnership between two organizations committed to improving children's learning and well-being through nature-based free-play within the context of licensed child care in Ottawa, Ontario. Experiences in nature and the outdoors characterized by rich, free-play opportunities are inconsistently embedded into licensed early years child care programs in Canada (Tanden, Saelens, & Christakis, 2015; Truelove, Vanderloo, & Tucker, 2017). Within the early years sector, there are inconsistencies not only in educator knowledge of play-based learning approaches (Rengel, 2013) but also in educator understanding about how play can be implemented within natural settings (McClintic & Petty, 2015). As a result of these disparities, children's overall health and well-being may be negatively impacted and significant learning opportunities may be missed (Massey, 2005; Malone, 2012).

The study reported in this paper explored forest and nature school programming (FNS) as one opportune pathway for filling gaps in early years licensed childcare programs' integration of nature-inspired, child-directed free-play opportunities. Many cultural factors underlie the current displacement of outdoor play-based learning (Gull Laird & McFarland, 2014; Kilkelly et al., 2016); the case study was designed with the intention to improve understandings of cultural considerations to support early childhood outdoor learning in the context of a partnership that can support grassroots systemic policy change through a licensed child care initiative. We hope that the case study findings will have regional impact by informing program improvement in the program under study. We also hope that there may be broader resonance of the case example, and that it may serve as a lighthouse program to be emulated in full or part elsewhere.

Forest and nature school is an umbrella concept for a breadth of approaches within a global outdoor education movement characterized by regular and repeated sessions in natural outdoor spaces. FNS sessions are implemented through child-directed pedagogical designs which operate within a "forest as teacher" mindset, and are delivered by educators trained in FNS pedagogy (Child and Nature Alliance of Canada [CNAC], 2014; MacEachren, 2013). This model is frequently regarded in popular culture as Scandinavian in origin; however, "forest schools" are prevalent throughout the world, and the Canadian movement of forest schooling documented in this paper draws from a range

of historical and contemporary models of nature-based education from Scandinavia, the United Kingdom, and elsewhere. It is also, importantly, informed by the land on which it is situated, and the long and rich educational practices of First Nation, Métis, and Inuit people who have existed here since time immemorial (CNAC, 2014; MacEachren, 2018).

Theory and Practice Framework: Thinking Through Forest-Inspired and Forest-Integrated Early Years Outdoor Play in the Anthropocene

The Earth is undergoing a period of rapid and irreversible change. Nobel Prize-winning scientist Paul Crutzen (2012) theorizes that we have entered the "Anthropocene," a new phase in the planet's evolution created through human activities that "have fundamentally and permanently changed the planet's biosphere" (as cited in Taylor & Pacini-Ketchabaw, 2015, p. 509). According to Crutzen, human activities have resulted in "the acidification of oceans, the depletion of the ozone layer, fundamental changes to the earth's carbon, phosphorous, and nitrogen cycles, climate change and the rapid loss of biodiversity" (p. 509). These interlocking environmental crises provide strong evidence of a transition into the Anthropocene. Meanwhile, human societies, and our education systems as social microcosms, have in many ways grown apart from the planet that sustains us. This separation is evident across Western social systems, with child care as early years education being no exception. Human–nature dichotomies make addressing the pressing ecological problems facing human existence that are bound up in the Anthropocene more difficult, and we propose through this project that forest-inspired and forest-integrated early years education is one promising avenue for building human capacity for ecological problem-solving in the Anthropocene.

Never before has the field of early childhood education been so crucial in supporting "unbound emergence" (Nxumalo et al., 2018)—the learning that arises from children's unstructured play in the "more-than-human" world (Abram, 1996). FNS, then, can play a critical role in the developing landscape of early childhood education in the Anthropocene. This landscape can be more than a reactionary response to environmental crises. Within it, we can reconfigure our mindsets and actions and seize this eventful naming moment of Anthropocene as one of transformational opportunity (Taylor & Pacini-Ketchabaw, 2015). In so doing, we can reimagine our surroundings not in terms of "state of emergency," but rather in terms of "energizing *urgency*" (Lakind & Adsit-Morris, 2018, p. 32), the latter of which promises a more hopeful, inspiring way forward. Such a reconfiguration also provides increased opportunities for children to build agency (Lakind & Adsit-Morris, 2018, p. 36) because it encourages them to imagine and create their own future in a dynamic relationship with the more-than-human. In such a scenario, they are co-collaborators with the more-than-human world rather than burdened saviours of our damaged planet.

The precarious state of our planet demands immediate and radical transformation of educational systems, especially for young children living in North America (Nxumalo et al., 2018, p. 449). As Payne (2018) notes, sustainability has come to be regarded critically, "as little more than an increasingly hollow slogan in education" (p. 125). Therefore, there is a need for "rewilding concepts into revitalized theory building and research development" (p. 126), a call which has been taken up by Nxumalo, Vintimilli, and Nelson (2018) and other members of the Common Worlds Research Collective (http://commonworlds.net). This collective and those who embrace its vision advocate that by building on existing practices from emergent curriculum, educators can understand the child within their more-than-human surroundings, help them to nurture strong relationships, and teach them about their interconnectedness with all things so they can better understand the impacts of their actions on the human and more-than-human world.

For the purpose of this case study, the Anthropocene serves as a contextualizing moment in which FNS in the context of licensed child care in Ontario is currently unfolding. The Anthropocene as a framing idea appeals deeply to the case study partners at the level of their mission statements, which each have underlying commitments to child, family, and community well-being. In the following section, we introduce the organizations partnering to develop the pilot licensed child care forest and nature school program, and we describe the context of the case study.

Case Study Background

Two partnering organizations form the foundation for this case study: The Child and Nature Alliance of Canada (CNAC) and Andrew Fleck Children's Services (AFCS). CNAC is a national organization whose mission is to connect children and youth with the outdoors through advocacy, policy development, professional learning programs, and delivery of child and youth programs regionally. Efforts to carry out this mission are grounded in the Ottawa Forest and Nature School. AFCS is a not-for-profit children and families service provider operating a suite of early years and family focused programs (including licensed child care and licensed in-home child care) in Ottawa. The Executive Directors of each of the partnering organizations are Marlene Power (CNAC) and Kim Hiscott (AFCS). Kim and Marlene are co-investigators in the case study and co-authors of this paper.

The "Pilot Program"

The case study explores a partnership between CNAC and AFCS that has developed over a roughly 10-year period (~2008–2018) and has led to policy implementation in the form of a shared memorandum of understanding (MoU). The MoU led first to a commitment on the part of AFCS to have a number of their

staff trained and certified in CNAC's forest school practitioner training and certification program, and later to the joint operation of a licensed, preschool-aged FNS child care program. The partners' initial vision for offering a pilot licensed child care FNS program was for a fully immersive program where preschoolers would spend five days a week in FNS while attending licensed child care. Over a roughly three-year period (2015–2018), AFCS and CNAC worked to realize this vision, in consultation with Ontario Ministry of Education officers who were reviewing the program for licensing under the province's *Child Care and Early Years Act* (2014).

It became clear that costs associated with building a facility that would satisfy licensing requirements in an immersive forest environment outstripped available financial resources. However, unwilling to give up on their commitment to the value of FNS, the leadership teams at AFCS and CNAC implemented program design compromises to overcome regulatory barriers (e.g., standards for indoor facility design, outdoor play space). In the ultimate pilot program delivery model, up to 16 children attend the licensed program three days per week in a child care centre and two days per week at the Ottawa FNS. When based at the child care centre, educators bring FNS elements into the indoor classroom and outdoor play spaces, and children also make daily visits to nearby nature within walking distance of the centre to engage in inquiry-based play (e.g., a grove of mature cedar trees on the back half of the school yard adjacent to the child care centre; mud puddles that sometimes form at the juncture of the school soccer field and the asphalt play surface). Across all five days of the week (child care centre and FNS days), educators leading the pilot program have participated in CNAC's FNS Practitioner Course. For the purposes of licensing, the two days of weekly immersion in the forest is considered a field trip, even though it is a regular and repeated program element. Two days per week of field trip was the maximum that could be negotiated with the Child Care Quality Assurance and Licensing Branch of the Early Years and Child Care Division within the Ontario Ministry of Education. This arrangement represents 40% field trip and 60% programming within the licensed facility and respects the ministry's interpretation of the regulations that at least 50% of programming on a weekly basis be conducted within the licensed facility. While the program delivery model at the time of launch in September 2018 falls short of the vision of fully immersive forest and nature school, CNAC and AFCS are pleased to be offering the pilot program as a means of demonstrating proof of concept that might lead to greater regulatory flexibility for forest and nature school as licensed child care in Ontario in the future.

Throughout the design and implementation of the pilot program, CNAC and AFCS maintained a deep concern for questions of *why?* and *how?* they were approaching FNS integration and immersion programming. This reflective practice gave rise to the notion of a *forest and nature school continuum* as a conceptual tool for understanding the pilot program. This idea is addressed in greater depth in the findings section.

Methodology and Methods

The project is viewed methodologically through the lens of collaborative action research (Jacobs, 2017), and it follows the method of an interpretive case study (Stake, 1995). The process of researching was developed as a collaborative enterprise between CNAC, AFCS, and the principal author as a collaborative research partner (Flynn et al., 2016). As critical action researchers, we follow Fine (2018) in her assumption that action research transcends a tool kit of strategies for documenting research and forms an epistemological stance through which researchers are agents of positive socio-ecological change.

Data collection strategies included a series of six semi-structured focus group conversations (Feldman, 1999) as well as document analysis of the partnership memorandum of understanding. Focus group conversation data comprise the dominant data source in this paper, with the MoU offering background and contextual support. Conversations ranged in size from 3 to 15 participants. Of the six conversations, three were detailed exchanges among the three first authors of this paper (Blair, Kim, and Marlene). These form the bulk of the data presented herein, given the CNAC/AFCS Executive Directors' shared expertise on the policy history of the pilot FNS project. One conversation was a large campfire circle discussion with Blair, Kim, Marlene, and a group of staff from both CNAC and AFCS. This conversation allowed for broader organizational input into the practice implications of the policies that enabled the pilot FNS program to exist. There were, however, some limitations in the depth of discussion because of the larger number of participants. The three remaining conversations were walking interviews (Lynch & Mannion, 2016) around forest school and child care centre spaces. These walking conversations are less dominant in the data presented here, but they provided important contextual background that significantly informed the findings.

Data analysis was conducted by transcribing audio recorded interviews and coding transcripts during multiple iterative rounds of listening and reading. Codes were assigned based on a provisional coding strategy (Saldana, 2015). They were then organized into themes that are reported herein; however, because of word count limitations and a focus on policy in this paper, only the themes most relevant to early years FNS policy are reported below. The memorandum of understanding was similarly coded, and codes were integrated into the larger dataset of interview data. Coding was completed by identifying codes within transcribed documents, using the comments feature in MS Word, and then copying all instances of each code onto sticky notes that were colour-coded, based on the conversation they were drawn from. The codes were then sorted and re-sorted by the first author to develop themes. The resulting themes were then provided to the broader authorship collective to verify and revise.

The project was reviewed and approved by the Research Ethics Board at Trent University. Ethical considerations attended to in the planning of the study

included the challenge of focus group confidentiality (managed by offering opportunities for private interviews as needed) as well as the mitigation of social/professional risk in a focus group where both employers and employees were participants (managed through an informed consent letter and an oral focus group preamble).

Findings: Enabling Forest and Nature School Opportunities in Licensed Child Care Contexts in the Anthropocene

The purpose of this case study is to review aspects of CNAC/AFCS's pilot licensed childcare FNS program in order to identify policy conditions that allowed for the successful development of the pilot FNS licensed child care program, and through which similar programs elsewhere might flourish. Through our data analysis, we propose that the following seven policy themes promote effective FNS program development within the CNAC/AFCS partnership. Themes are presented in the order of their conceptual prominence within the data analysis; prominence was judged qualitatively by the researchers, and not by quantitative strategies such as code-counts. As a result of this research design choice, and because of the nature of qualitative research more broadly, our values and assumptions about FNS are inherently present within the findings. Knowing we could not write our selves out of the findings, we endeavoured to practise researcher reflexivity in order to maintain awareness of our own presence in the data (Chase, 2005; Iannacci, 2007). Still, there may be blind spots, and we encourage readers to approach our take-aways with a critical gaze.

1. A Forest and Nature School Continuum

A keystone finding of this case study is the articulation, through dialogue, of a continuum of forest and nature school program delivery options spanning from all day, everyday immersion in forest/nature to an integrative forest/nature school practice in which elements of FNS pedagogies may be integrated into otherwise indoor (or traditional fenced outdoor play area) programming. Participants (both organizational leaders and frontline educators) described conceptual understandings and practical pedagogical strategies that point to a continuum heuristic as a useful workaround strategy in the face of policy barriers that may limit opportunities for immersive FNS programs, despite the evidence-supported benefits of such learning experiences (Kuo, Barnes, & Jordan, 2019). As a workaround strategy, understanding FNS in a continuum provides an opportunity for educators and programmers to attend to the urgency of the Anthropocene even where it may not be possible to implement immersive FNS practices in "all or nothing" ways. In our first conversation, Marlene described a nature continuum in terms of its importance for reinforcing the principle of regular and repeated access to nature that is fundamental to FNS:

> There are forest school programs that are on school grounds, like a patch of three trees, and then there are programs like ours [Ottawa FNS], in a really immersive woodland space, um, downtown Ottawa.[1] So, it takes place in what we call the nature continuum, in really diverse spaces. It's the regular repeated experience in the same natural space is a really, really core piece of the work. (Focus Group A)

In another conversation, Kim described the time split in the pilot program between child care centre days and days spent immersed in the forest. She echoed Marlene's articulation of the significance of regular and repeated access, even when an immersive experience isn't available:

> So we're going to have the < < immersive forest opportunity > > here [Ottawa FNS]… and then, the other 3 days we'll be using the nearby nature, that's you know, the edge of the field where the school is, and so they'll create their own repeated and regular access space. (Focus Group B)

The notion of an FNS continuum was further nuanced in a large focus group conversation with educators, where Brenda,[2] a consultant to AFCS's network of home child care providers, highlighted the value of accessing nature in communities where children live:

> And, we're going to local wooded areas, or strips of trees, or whatever we can find that's within that area. So… that's a challenge… 'cause we're constantly having to look at the space a different way. It's like, can we do something here? Is this a good spot to be able to do it in? And then sometimes you'll find a forest and it's just like "Aaaaah!" And you have climbing trees, and you have tall grass, and all these beautiful places. And so, that in a way is also a challenge but it's also a really cool thing for us in the home child care department because we have that ability to be mobile and to find those little nuggets or locations that are in their community. And we know, because they've told us, that they go back to when we're not with them.

Brenda's assertion that children report re-visiting nearby nature spaces that they have attended during child care programming suggests the value of understanding FNS as a continuum of nature-based pedagogies. The continuum features varied indoor and outdoor environments, along which the key pedagogical commitments of regular and repeated access to nature, and a child-centred, inquiry-based learning process are consistent.

2. Indoor/Outdoor Disconnection in Regulation: Square Peg, Round Hole

> You know, square peg is like the indoor building. And, a lot of our legislation has been built around that concept of four walls… What is it going to take to align outdoor play, forest and nature school… with the licensing that maybe has been designed and built with a different worldview… with the indoors kind of at the forefront? (Marlene, Focus Group C)

Much of the dialogue about provincial regulation focused on prescriptive requirements for indoor space. For example, Kim shared:

> The licencing does obligate you to have that interior space, with play materials, program rooms, set up, um, and it seems to me that that's something in… what… we're envisioning, will not be very well used, so it seems like an additional expense for not much… value. (Focus Group A)

This highlights the requirement to develop and maintain costly indoor facilities even though an FNS program ideally makes little use of such spaces. This reflects a disconnection between FNS program designs and the assumptions embedded in Ontario's *Early Years Act* (Ontario Ministry of Education, 2014). The regulations within the *Act* are predominantly relevant to indoor and outdoor built space and have little to offer as regards what a well risk-managed FNS environment should look like in the context of licensed child care.

Marlene highlighted an important aspect of this misalignment, noting that while regulation demands predetermined requirements for indoor and fenced-outdoor learning environments that are expected to be relatively static, the FNS model under which CNAC/AFCS operate equips educators with skills to make judgements about dynamic outdoor learning environments, using risk assessment frameworks:

> So… supporting educators to navigate situations on the ground, on the spot when children are playing, and so the framework is going to outline… risk management practices, and risk benefit assessment, and we're hoping to, over the next 3 to 5 years, like, establish that framework as… a best practice, or, maybe even see about embedding it within legislation. (Focus Group B)

This represents a significant shift in thinking about risk management that is not currently accounted for in provincial regulation in Ontario.

Disconnections between the regulatory framework of licensed child care in Ontario and FNS programming leave the leadership and frontline teams at CNAC and AFCS concerned about the challenges of mainstreaming FNS through licensed child care. Moreover, they are hindered in their attempt to implement educational responses to the Anthropocene. However, findings of the case study show that both organizations are eager to help regulators understand the context and benefits of FNS, with a particular focus on risk assessment. Findings also underscore the capacity for FNS practitioners to manage risk in outdoor environments in ways that would mirror the level of safety and supervision that regulations mandate for licensed child care in Ontario.

3. Social and Ecological Justice Values

Equity of access to FNS programs is an important social justice value for both CNAC and AFCS. This shared commitment is documented in the organizations' MoU: "Both CNAC and AFCS are committed to enhancing equity and access to the outdoors for all families attending or using their services" (p. 2). This statement is based in a joint understanding of the financial burden that child

care costs often present to families. It is likewise grounded in the realization that programming in the vein of forest and nature school is often offered as an alternative or specialty program. As such, it is priced at a higher tier than more conventional child care programs and includes additional financial investments that are not associated with indoor child care (e.g., cost for all-weather outdoor clothing, additional laundry costs in time and money). Kim elaborated that:

> Child care in itself is expensive, you know, it's not an effectively funded, per se, experience…. So, the cost can be quite expensive for families and that's just not completely comfortable for us… we would like the program to be affordable to everybody… wouldn't it be wonderful if everybody could decide where they want their children to go…. So, you know, we're paying attention to that as well… it's one of the challenges. (Focus Group A)

In Ontario, many early years forest and nature school programs are offered through exemptions from the *Early Years and Child Care Act*. That positioning supports the annexation of FNS as alternative or special interest. Programming FNS as licensed child care offers a degree of mainstreaming that could allow the program to be priced comparably to conventional child care and/or to permit access to sources of program funding that could increase access to families across the income spectrum. Marlene drove this point home:

> My really keen interest in this licensed child care program, and the partnership in general; Kim and AFCS are working in amazing communities, with amazing families, and amazing children that we want to reach. And, we want to demonstrate that forest school and nature-based early learning is not this kind of… posh alternative program for… families that can afford it… but that really it is accessible, and applicable, and valuable for all children and families. (Focus Group B)

In the foregoing, Marlene articulates in plain language the social justice value position entrenched in the CNAC/AFCS partnership MoU cited above—a position which is justified by environmental education literature that documents ways in which environmental crises within the Anthropocene are disproportionately experienced by groups who are marginalized through inequities such as classism, racism, and sexism (Norgaard, 2012) and who have been historically marginalized from outdoor and environmental programming like FNS (Ambreen & Berger, 2016; Gibson-Wood & Wakefield, 2013).

4. Organizational Alignment and Developing Capacity

Study participants shared the importance of working together to align organizational aims with available funding in order to achieve a depth of impact through forest and nature-based programming that can operate within the parameters of licensing regulations. It became clear through the case study that this kind of alignment takes significant time. Marlene explained that in its early days of operation, CNAC was in a position of "really big dreams, [and] very little

capacity" (Focus Group A). The organization was aware that through developing a long-term collaborative project, there would be an ability to build capacity together. Marlene explained further that:

> When I reached out to Kim in the beginning, it was with that vision in mind, that we were eventually working towards a licensed childcare program, and very quickly we started talking about the synergies and collaborations that could happen with that new facility and that new program. And, from those conversations, we developed a memorandum of understanding, and started carving out what the partnership would look like. That… went to both of our boards, and… we had huge endorsement from our board, and we were able to move forward. (Marlene, Focus Group A)

Kim corroborated these details:

> I was able to go to our board and say, Okay… we have this collaboration, if we're going to move it forward, we need to invest in the development of our staff… And, they approved that. And so, that was… planting their feet and saying, yes, they actually did agree… And we can say we're doing this not just because it's the flavour of the day, or there's an opportunity for funding, or there's an interest, it's actually a commitment from our organization. (Focus Group A)

Across these statements, it can be understood that the CNAC and AFCS have agreed to align their work in order to implement and scale up innovative programs that address unmet community needs, including the need for educational responses to the Anthropocene.

5. Forest and Nature Pedagogies: Seeing is Believing

Participants (organizational leaders and front-line educators) emphasized that policy which supports FNS programming in the context of licensed child care must be designed with an understanding of the pedagogy that defines FNS. Participants demonstrated a remarkable fluidity with concepts from the literature that frames FNS pedagogies, such as: regular and repeated access (Knight, 2013; O'Brien,2009), child-led learning (CNAC, 2018; Gray, 2016), child competence (Maynard, 2007), and "risky play" (Brussoni et al., 2015; Harper, 2017, 2018). They used these concepts as they talked about their work. What is more, they did not evoke these concepts uncritically as mere educational wordplay or sloganeering. Rather, the participants explained that their practice of FNS pedagogies has uncovered empirical evidence of the value of FNS approaches for children's learning. Diane articulated this nicely in regard to risky play during a focus group with educators who had recently completed FNS practitioner training:

> *Blair:* Could you articulate some of those benefits [of risky play]?
>
> *Diane*: Gross motor, coordination, spatial awareness, determining the level of risk for themselves… and, it's great for us as practitioners, as educators, to actually be

> saying those things, and then actually seeing them happen. And, you're kind of going "See? It happens!"…and then the providers seeing it, and then the parents seeing it, and they're like "Wow!, you're right, that is true." They *will* stop when they feel they're not secure, or they *will* not go as far as you think they will… They'll stop before then in most cases, right? So it's just letting them… proceed and take those risks for themselves. (Focus Group C)

Another educator, Rachael, chimed in to support how risky play helped to shift adults' thinking about children's capability:

> I think that it's a mindshift, because that adult, whoever they are in that child's life, instead of right away thinking something bad is going to happen if a child picks up a stick, climbs, whatever…. I think that's the biggest mindset change that we've seen in our play groups… not to expect the worst, or something negative to happen, but to actually, kind of see what's gonna happen…. 90% of the time it's a positive moment. It's a skill-building moment.

Marlene and Kim also described an empiricist *seeing is believing* stance regarding the power of FNS pedagogies. Kim began by talking about the first time that she was invited to see programming at the forest school. She declared, "just seeing it is an endorsement!" (Focus Group A). Marlene circled back to this point later in our conversation in relation to convincing external stakeholders about the value of FNS based child care programming: "My approach has always been to just invite people here… Like, if it's like, *<<what will children do when they're in the forest?>>*, and my response is… come…! Come and see…! And seeing very much is believing" (Focus Group A). This notion of seeing is believing is valid in terms of how children learn within the FNS model, as well as in terms of how adult stakeholders are convinced of the potential for FNS as a mainstream program opportunity through licensed child care. Jickling (2009) describes this kind of emotional understanding that often arises from nature-based learning experiences: "I *felt* it long before I understood it…. I felt something that transcended words and even memory. It was an embodied, know-it-in-your-bones kind of knowledge" (p. 166). Jickling gives credence to the kind of knowledge outcomes that forest school can produce. Still, advocates must persist; if a know-it-in-your-bones understanding was enough, FNS would already be mainstreamed into the regulatory framework of licensed child care, and the Anthropocene-urgency suggested through our theory/practice framework would be relaxed. Such a future is not out of reach, as other jurisdictions have moved in recent years to reimagine regulation in ways that embrace different kinds of opportunities for safe and effective early years programming (Perlman, Howe, & Bergeron, 2020, this volume). The findings of the CNAC/AFCS FNS case study suggest that, in order to continue advocating for regulatory change, it is necessary to integrate the kinds of emotional understanding that many people experience in response to FNS exposures with large-scale, clinically designed research knowledge

(cf. Brussoni et al., 2018; Kuo, Barnes, & Jordan, 2019) that shows positive health and behaviour effects of FNS.

6. Training and Professional Development for FNS Educators

The risk aversion associated with the regulatory "square peg, round hole" disconnection described above is directly related to training available to early childhood education workers broadly, and FNS educators more specifically. Indeed, the genesis of the partnership between CNAC and AFCS was in large part a shared desire to initiate training that would increase early childhood educators' professional capacity to deliver outdoor education. Kim described the significant commitment that AFCS made to providing CNAC's Forest School Practitioner Certification as a strategic priority benefiting the whole organization:

> Since I've been at AFCS, one of my goals was to make sure that there was connection amongst our programs… because before, we had a lot of programs happening but they were happening in isolation. So, one of our goals was to… provide professional development and career development opportunities for our early childhood educators…. We really felt that we needed to do work to provide professional development between programs. So… the forest and nature practitioner course was a key piece of that. Because now we're doing something that, it's touching every one of our programs. It's not just for our licensed program, or just for our children's inclusion program. So that was pretty key. (Focus Group B)

Front-line educators who contributed to the case study shared the range of positive impacts that the practitioner certification had for them. Carol, a program manager, described reconnecting with the fun that she used to have as an educator:

> My job prior to the… practitioner course was turning into paperwork, paperwork, pick up this, do this, make sure all the Ministry requirements are done, and the fun has kind of gone out of it for a little bit. And now, getting back to this, I've always loved being outdoors and being able to get outdoors with the children, and share that love of nature with the children, and seeing them enjoy it has really revitalized me. (Focus Group C)

This perspective shift was a common thematic focus among the AFCS staff who had taken the certification. Another participant, Patti, shared how her understanding of play-based learning had shifted during the training:

> There was a structure, and one of the children was taking it down, and the educator entered into the play to redirect, and that was my moment of "Oh, I've been redirecting wrong…!" That was kind of like "Ahh, I've gotta enter into their level and come at it a different approach," and when I did it, I was getting different results. (Focus Group C).

A third educator, Joanne, shared how the practitioner certification helped her communicate to others about FNS, to revise policy, and to innovate her ideas and practices as an early childhood educator:

> Doing this training has enabled me to model and to speak to providers and parents about forest and nature school…. We've also embedded a lot of the philosophy, the approach in our newsletter, it's in all of our policies, but we've even highlighted it in our outdoor play policy… it's all stemmed from the training… all of these really cool things that help us to be innovative and to be trying this approach. (Focus Group C)

Discussing the practitioner course as part of the CNAC/AFCS partnership, Marlene drew on her experience to comment on sector-wide concerns regarding educator preparation for outdoor play in general, and play-based learning more broadly:

> Part of the challenge is around teacher-training. And, you know, our… degree/diploma programs, and like whether or not we're really supporting our educators to leave school…. Prepared to support play? Or with an understanding of play theory?, and understanding of… ecological assessment and their impact on the environment with students…. It's been a particular challenge over the last ten years…. There's maybe a… mismatch in terms of preparation, like demand for programs like this [referring to FNS], and how prepared we are on the ground to deliver and teach in this kind of setting. (Focus Group A2)

Marlene's concerns here echo critiques raised in the literature (Leather, 2018) on FNS practitioner training and the degree to which FNS educators may be prepared to teach with a pedagogical intentionality informed by historical, cultural, and philosophical underpinnings of FNS in Canada and globally. Currently, CNAC's FNS practitioner training course is one of the only options (beyond short workshops) for FNS-specific training in Canada that provides a depth of learning. Elsewhere in our discussions, Marlene shared that every practitioner course that CNAC offers fills to capacity, often within minutes of registration opening.

In response to this deficit in professional development, CNAC and AFCS recently expanded their partnership. Under their revised agreement, AFCS will assume full responsibility for the day-to-day operation of the Ottawa Forest and Nature School. While CNAC will still provide support for these programs, and the Ottawa Forest and Nature School will still serve as CNAC's demonstration site, divesting from the daily operation and staffing of the school will free up resources and permit CNAC to invest more in its national training programs and develop its positioning as a national thought and practice leader in the area of FNS.

7. Individual Actors as Champions

The significant roles of individual champions at all levels of organizational function became apparent as the case study progressed (including educators in the field, executive directors, boards of directors, and Ministry of Education staffers who license the program). While successes in developing and implementing a licensed child care program in the context of FNS are a result of the collective persistence of individual actors—from grassroots to

executive—they are especially a consequence of the tenacity of the two executive directors.[3] As operational leaders of their respective organizations, Kim and Marlene catalyzed individual and institutional value commitments to early years outdoor play that transformed into a persistent force toward intentional action. This energy allowed the pilot licensed FNS program to exist. As policy leaders, they continue to initiate and sustain CNAC/AFCS's sense of urgency about an educational response to the Anthropocene because they recognize that many contemporary approaches to early childhood education, while well intentioned, do not go far enough in preparing early learners to develop agency that can respond to the local and global needs that will arise during their lifetimes. Our sense of this finding is not that individual drive is a primary factor in successful program implementation, but rather that passionate individuals contribute to organizational energy and synergies that foster effective policy development and FNS program implementation.

Summation and Next Steps

As a developing branch of environmental education theory and practice, FNS offers potential as an early years educational response to the ecological challenges of the Anthropocene (Payne, 2018). We believe our reporting herein and further cycles of action research in our case study support this development, both in terms of clarifying policy aspects that may enable FNS pedagogies in practice (e.g., understanding a continuum of FNS pedagogies, advancing social and ecological justice through FNS) and as regards naming barriers that have been faced in designing and implementing an FNS program in the context of licensed child care in Ontario (e.g., regulatory disconnections between indoor/built and natural play environments).

In the face of regulatory barriers, the CNAC/AFCS case study of the collaboration to launch the pilot program offers a strong ethos of hope for, and action toward, mainstreaming FNS. However, that same hope is debased by the ongoing challenge of offering quality FNS programs that satisfy Ontario's regulations under the *Child Care and Early Years Act* (2014). The Act largely fails to recognize important contexts of FNS, especially regular and repeated access to natural outdoor space (as opposed to built facilities) where children lead their own play and learning with guidance and support from FNS-trained educators. This sentiment should not be interpreted as a rebuke of regulation. Case study participants spoke positively about child care regulation and regulators. They also expressed a willingness for FNS to be appropriately regulated in ways that acknowledge the context and goals of FNS to promote the learning and well-being needs of children, families, communities, and the planet.

At the time of writing, the CNAC/AFCS licensed child care FNS program is within its first year of operation. Primary data collection for this paper occurred in the months before the program launched. Further cycles of action research

are planned to understand the policy and pedagogical impacts of the program as it develops. We anticipate more fully exploring the notion of the FNS continuum as an important heuristic for the mainstreaming of FNS in Canadian licensed child care and early years programs. We also foresee potentially extending the range of participant voices in the case study to include children who participate in the pilot licence program, and their parents.

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Notes

1 Marlene's example here references an urban child care centre in downtown Ottawa that enacts FNS programming in an urban environment.

2 All participants, with the exception of Kim and Marlene (co-investigators), are identified using pseudonyms.

3 While Marlene and Kim served as co-investigators in the case study, this assertion is drawn from Blair's analysis of focus group transcripts and document analysis. It is not derived directly from statements made by the executive directors.

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College Faculty's Outdoor Play Pedagogy: The Ripple Effect

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Abstract

The governments of many nations invest significant funding into early childhood education (ECE) programs. These programs play an important role in preparing early childhood educators for the workforce; however, it is unknown how many include training in outdoor play. We examined how outdoor play pedagogy is positioned in publicly-funded college and institute programs in Canada. Only five Canadian public colleges listed explicit courses on outdoor play in the fall of 2018. Despite this lack of calendar offerings, a survey of 28 faculty from 24 different institutions indicated that outdoor play training was seen as important. We recommend that those working to advance outdoor play pedagogy include college faculty in the process and that professional development resources focused on outdoor play be made available to college ECE programs.

Resumé

Dans de nombreux pays, les gouvernements investissent d'importantes sommes dans les programmes de formation des éducateurs à la petite enfance. Ces programmes jouent un rôle essentiel pour préparer les candidats au marché du travail; nous ignorons toutefois combien de ces programmes abordent le jeu en plein air. Le présent article examine la place qu'occupe la pédagogie du jeu en plein air dans les établissements et collèges publics du Canada. Cinq seulement proposaient des cours expressément dédiés au jeu en plein air à l'automne 2018. Malgré l'offre de cours limitée, la formation sur le jeu en plein air est jugée importante selon 28 membres du corps professoral de 24 établissements différents interrogés dans le cadre d'un sondage. À ceux qui travaillent à faire progresser la pédagogie du jeu en plein air, nous recommandons de faire participer au processus les enseignants des collèges et de rendre accessibles les ressources de perfectionnement professionnel sur le jeu en plein air dans les programmes d'éducation à la petite enfance offerts dans les collèges.

Keywords: outdoor play, pedagogy, pre-service ECE programs, training, college faculty

Mots clés : jeu en plein air, pédagogie, programmes de formation initiale en éducation de la petite enfance, formation, enseignants collégiaux

Introduction

Imagine what it would be like for a child on a day (or several days) of not being outdoors. Think about the experiences and learning opportunities that children

miss when they are not afforded access to the wind at their backs or the feel of raindrops softly falling. Imagine how the lack of outdoor play and connections to nature, such as observing and finding animal tracks in the snow, engaging in risk-taking, and developing environmental competencies, negatively influences children's social, emotional, cognitive, and physical development. Children are hard-wired to need nature and to be part of natural environments (Smirnova & Riabkova, 2016). It is widely recognized that positive outdoor play experiences in nature engage all the senses and promote a sense of curiosity and wonderment, which contribute to the development of children's self-confidence and connection to their environments (Carson, 1956; Wilson, 2012). This is foundational to children becoming stewards of the environment.

In many nations, governments have been investing significant funds into early learning and childcare—for infrastructure, the development of curriculum frameworks, access to early learning and childcare programs, and, in some instances, training and development. In Canada, publicly funded pre-service early childhood education (ECE) programs at community colleges and institutes play an important role in preparing early childhood educators for the workforce (Kaplan, 2018). Collectively, these colleges and institutes comprise the membership of Colleges and Institutes Canada (Colleges and Institutes Canada, 2019).

In recent years, researchers have viewed unstructured "outdoor play" as a vital experience for the healthy development of children, and especially young children (Chawla, 2015; Coe, 2016). However, as this study will show, in Canada and elsewhere, there has been a trend toward less outdoor play. This study is a preliminary investigation of how outdoor play pedagogy is positioned within Canadian colleges' and institutes' ECE programs.

Background

Environments influence children's curiosity, activity, and inquisitiveness (Crohn & Birnbaum, 2010). Adult role models have a major influence on children's desire to explore, discover, and participate in caring practices that contribute to sustaining their environment on a long-term basis (Dietze & Kashin, 2019a). As well, environmental sustainability and developing a connection to nature, play, and ecological literacy are emerging concepts that are being encouraged to be adopted in early learning and child care programs because sustainable behaviours and social responsibility are learned and cemented at a young age (Louv, 2008; Redman, 2013).

According to some international scholars (Beery & Jonsson, 2015; Brussoni, Ishikawa, Brunelle, & Herrington, 2017; Dietze & Kashin, 2019a; Little & Sweller, 2015; Sandseter & Sando, 2016; Wood, 2017), the current lack of sufficient and intriguing outdoor play for children is problematic in many early learning and child care settings, schools, and communities. Prior studies have found that the lack of access to and opportunities for outdoor play is negatively impacting

children's development (Becker, McClelland, Loprinzi, & Trost, 2014; Dowdell, Gray, & Malone, 2011; Legget & Newman, 2017; Sandseter & Kennair, 2011). Teachers influencing children's programming must have intentional training that demonstrates how multiple types of outdoor environments and experiences support children's quest to learn and develop (Brown, 2015; Dietze & Kashin, 2019b; Williford, Vick Whittaker, Vitello, & Downer, 2013). The attitudes and emphasis placed on outdoor play by college faculty and ECE teachers training students in practicum or fieldwork influence how students position outdoor play in their practice (Dietze & Kashin, 2019b; Ergler, Kearns, & Witten, 2016; Zurek, Torquati, & Acar, 2014).

Among ECE teachers, there is a lack of confidence in designing, implementing, and facilitating appropriate curriculum (Carrier, Thomson, Tugurian, & Stevenson, 2014; Mirka, 2014; Ridgway & Quinones, 2012). If college faculty delivering outdoor play pedagogy curriculum to pre-service students do not have the educational background or experience with it, the probability is low that they will emphasize it in the curriculum or advocate for explicit inclusion during curriculum reviews (Baust, 2013; Carrier et al., 2014; Dietze & Kashin, 2018). Teachers themselves require practice in using the outdoors as a space for various types of play and learning about their environment and themselves (Baust, 2013; Dietze & Kashin, 2018).

In Canada, attention to the lack of outdoor play is mounting across disciplines; however, approaches to changing current practices are fractured due to differing provincial and territorial government policies on the ECE curricula and expected competencies with which ECE graduates enter the field. The duration of programs and the backgrounds of faculty teaching ECE programs vary from one institution to another; moreover, the teaching and learning pedagogy, procedures, and philosophies as well as the preparation of early childhood educators and teachers (Gill, 2016; Lawson Foundation, 2019; Malaguzzi, 1994) differ from one institution to another and from one province and territory to another. Faculty may not necessarily be informed of new policies that should be considered in their curriculum so that students can gain exposure to them (Lawson Foundation, 2019).

This study seeks to understand how Canadian colleges and institutes that are delivering pre-service ECE programs position outdoor play pedagogy in their programs. The presence or absence influences how graduates transfer its importance to their professional practice with children (Carroll-Lind, Smorti, Ord, & Robinson, 2016; Cooper, 2016; Dietze & Kashin, 2014; Doan, 2013).

Research suggests that outdoor play is considered an ideal environment from which children's play experiences contribute to their sense of inquiry, curiosity, and developmental domains (Dietze & Kashin, 2018; Norodahl & Johannesson, 2016; Ostroff, 2016). Children who regularly engage in outdoor exploratory experiences develop stronger self-regulatory behaviours, communication skills, creativity, and attention spans. Outdoor play solidifies academic concepts and improves relational skills (Gehris, Gooze, & Whitaker, 2014; Kemple, Oh, Kenney, & Smith-Bonahue, 2016). Despite the major contribution

that outdoor play makes to children's development, research suggests that children in early learning and childcare programs are spending less time engaged in outdoor play than previous generations (Dietze & Kashin, 2016; Ernst & Tornabene, 2012; Legget & Newman, 2017). In fact, it appears that childhood is becoming somewhat of an indoor phenomenon. Often, when children do have access to outdoor play, they are limited in their scope of play and interactions with nature. This is due in part to adult intervention and the lack of intentional curriculum and programming (Brussoni et al., 2017; Buitink, 2009; Dietze & Kashin, 2018).

The Australian *Early Years Learning Framework* (EYLF) defines curriculum as "all the interactions, experiences, activities, planned and unplanned, that occur in an environment designed to foster children's learning and development" (Department of Education, Employment and Workplace Relations, 2009, p. 9). Further, the EYLF defines intentional teaching as:

> Educators being deliberate, purposeful and thoughtful in their decisions and actions. Intentional teaching is the opposite of teaching by rote or continuing with traditions simply because things have always been done that way. (Department of Education, Employment and Workplace Relations, 2009, p. 15)

Legget and Newman (2017) outline the need for careful planning and management of outdoor play curriculum, as did Epstein (2007) a decade earlier. To address the sociocultural shift needed to advance outdoor play in early learning and childcare programs, they call for developing a comprehensive curriculum and the training of more staff who understand outdoor play pedagogy.

Pre-Service Early Childhood Education Programs at Publicly Funded Colleges

In Canada, pre-service ECE programs are offered within all provinces and territories at publicly-funded post-secondary institutions, though the educational requirements to become a pre-service ECE teacher vary from one province and territory to another. The pre-service ECE programs at publicly-funded colleges and institutes in Canada that are members of Colleges and Institutes Canada (Colleges and Institutes Canada, 2019) train the majority of early childhood educators for the workforce.

Pre-service programs can be defined in a number of ways, but for the purposes of this paper, they refer to the formal education and training that students undertake to acquire a credential in a particular field of study (Department of Higher Education and Training (DHET), 2015). In the instance of ECE, trainees gain skills in planning and deploying nurturing and challenging curriculum, programs, and environments that support children's developmental needs, play interests, and curiosity aspirations.

College faculty play a critical role in pre-service programs and the quality of graduates. They determine what is included or excluded in the pre-service curriculum and how the theory and application of theory are delivered to students (Balter, van Rhijn, & Davies, 2018; Darling-Hammond, 2010; Tannehill & MacPhail, 2014). Curriculum design and delivery in pre-service ECE programs are of particular importance when investigating how children's outdoor play opportunities and experiences may be increased (Legget & Newman, 2017). If, how, and when college faculty incorporate outdoor play pedagogy into their programs influence how graduates of those programs transfer theory and application into their practice (Balter et al., 2018; Tsangaridou, 2017).

Currently, there is a lack of adequate knowledge on the depth and breadth of outdoor play pedagogy in pre-service programs in Canada. We estimate that there are some 3,000 ECE students in pre-service programs in Canada annually. Findings of an earlier study conducted by Dietze and Kashin (2017) showed that of 896 ECE teachers working in a variety of early learning and childcare programs, 89% had not been exposed to outdoor play pedagogy during their pre-service training. Research shows that how new ECE teachers explore or value outdoor play is highly influenced by how they were exposed to theory, concepts, and experiences during their pre-service training (Balter et al., 2018; Tsangaridou, 2017). We contend that an explicit outdoor play pedagogy curriculum in pre-service programs, including specific learning outcomes during practicum or field experience, would contribute to more outdoor play pedagogy in professional practice. Teaching and learning that occur in pre-service programs have a ripple effect in the following way: Curricular frameworks and documents guide college faculty, who in turn influence the experiences and curriculum delivered to pre-service students, raising the probability of more, quality outdoor experiential learning with children (Beyer et al., 2015; Ergler et al., 2016; Williams, 2016). We seek a better understanding of the training pre-service ECE students receive and the perceptions held by the college faculty who instruct them. This information is critical for raising the status quo in children's outdoor play.

Nature of Pre-Service Training

Although publicly-funded college pre-service ECE programs across Canada differ in learning outcomes, curricular frameworks, program lengths, and faculty backgrounds, they are all composed of a combination of theory acquired though courses and application of theory to practice through classroom experiences, fieldwork, and/or practicums. The practical component of pre-service programs is grounded in the work of American philosopher John Dewey and his theory of experience (1938). In *Experience and Education*, Dewey suggests that learning must be aligned with actual life experiences. This "experiential style of learning provides for a more achievable outcome" (Freeman, 2009–2010, p. 15), resulting in better trained and more effective teachers. Practicums afford students with opportunities to observe more seasoned teachers in action, to begin to create

play and learning provocations, and to engage with children and guide them as required. Ideally, during a practicum or field experience, students have the time and space to interact with the children and with the teacher mentors in the outdoor play portion of programs (Gomboc, 2016; Gustavsson & Pramling, 2014).

College faculty, including those in pre-service ECE programs, are hired for their educational backgrounds and experience in a particular discipline. They may not necessarily have a background in teaching pedagogy or specific curriculum content areas that they are assigned to teach. This means that some faculty delivering pre-service curriculum may have education and experience working with children, but not necessarily a depth of knowledge or experience in facilitating or embracing outdoor play pedagogy and programming (Baust, 2013). In light of this, Baust calls for specialized experiential training of faculty on how to provide multiple environments for children to learn and grow.

Although outdoor play pedagogy research outlines the relationship of outdoor play to children's health and development (Dietze & Kashin, 2019a), "teacher preparation programs are increasingly seat-based, computer/television screen education, leaving out nature and the out-of-doors" (Baust, 2013, p. 1). If college faculty do not have experience in environmental education or in using the outdoors as a rich play and learning site, the quality of children's outdoor play experiences is jeopardized (Baust, 2013; Dietze & Kashin, 2018) because how and what pre-service ECE students experience in their program influence how they position outdoor play in their practice (Dietze & Kashin, 2018; Ergler et al., 2016; Norodahl & Johannesson, 2016). Without intentional outdoor play pedagogy and exposure to positive role models who implement experiential outdoor play, there is a gap in the students' knowledge and practice (Dietze & Kashin, 2018; Koc, 2012). Ideally, graduates from pre-service ECE programs acquire an understanding of how outdoor play supports children's development, appreciation of their outdoor environment, and zest for learning, as well as how it contributes to later academic success (Duque, Martins, & Clemente, 2016; Ernst, 2014; Kemple et al., 2016).

Another factor influencing outdoor play pedagogy in pre-service training is the college faculty contract. Hogen and Trotter's (2013) findings determined that "college and institute faculty members are primarily hired to teach and have broad discretion in how they teach as long as the objectives stated in the course outline are followed" (p. 78). This may have either positive or negative effects on the extent to which faculty members advance outdoor play pedagogies in pre-service programs. Faculty have the autonomy to deliver specified learning objectives and assess outcomes in a way they see most appropriate. For some faculty, this may mean that lectures are the predominant method of curriculum delivery, while for others, curriculum may be delivered through a combination of theory and experiential learning activities. No matter what the teaching and learning strategies are, studies emphasize that students in pre-service programs require experiences in and with nature and the environment as well as in

outdoor play pedagogy in order to influence their later professional practice (Duque et al., 2016; Ernst, 2014; Kemple et al., 2016).

We argue that students in pre-service programs who are neither familiar with examining the attributes of outdoor environments nor exposed to both the theory and application of outdoor play pedagogy will enter the workforce with a narrower view of why and how outdoor play has as much significance in early learning and child care programs as indoor programming. As Ernst (2014) and Mosothwane and Ndwapi (2012) note, limited training negatively affects teachers' sense of efficacy and competencies in engaging children in quality outdoor play experiences. If college faculty have not been exposed to environmental education or outdoor play pedagogy and the related research, they will be less likely and less able to provide rich outdoor play curriculum to their pre-service students (Iskos & Karakosta, 2015; Malandrakis & Chatzakis, 2014).

A review of many provincial policies and curriculum frameworks suggest that they lack specific learning outcomes related to outdoor play (McCuaig & Bertrand, 2018). This may contribute to both college faculty and ECE teachers working in early learning and childcare programs in having a limited understanding of the value that outdoor play experiences (Martin, Drasgow, & Halle, 2015) in their programs. Ernest (2014) and others suggest that college faculty members' ability to provide pre-service students with the theory or the practical application of outdoor play pedagogy in early learning and childcare programs is not well developed (Moseley, Huss, & Utley, 2010; Mosothwane & Ndwapi, 2012).

The hypothesis for this study derives from the literature review above, namely that outdoor play pedagogy is not prominent in pre-service ECE programs across Canada. In this paper, we present our findings from a preliminary, national, two-part study that examines if and how outdoor play pedagogy is positioned in English and French publicly-funded pre-service ECE college and institute programs.

Methodology

Overview

The study had multiple parts to it beginning with a literature review. This paper will focus on the results of the website reviews and survey results. The review of English and French websites was conducted to identify those publicly-funded Canadian college and institutes with pre-service ECE programs; from these programs, we identified what we referred to as explicit courses, that is, courses that made reference to outdoor play, outdoor play learning, or nature play in the course title. One of the purposes of the online survey with college faculty identified as providers of the explicit courses above was to gain insight into how outdoor play pedagogy and curriculum are delivered in their pre-service ECE programs. An understanding of the types of supports and resources that these college faculty received was sought.

Methods

The research team at Okanagan College received approval from the college's Research Ethics Board. The study was oriented to public-funded college ECE programs. Data for the first component of the study were gathered from a review of the website of Colleges and Institutes Canada as well as a review of 100 websites identified covering English (n = 59) and French (n = 41) Canadian colleges and institutes across all provinces and territories that offered pre-service ECE programs. Of the 100 institutions with ECE programs, 96 had both the course names and calendar descriptions listed on their websites. Researchers emailed or submitted web forms to the four institutions with ECE programs without course detail on their websites.

All pre-service ECE calendar descriptions and/or course listings were examined to determine if explicit outdoor play courses were offered or if there were identifiable words or phrases (e.g., outdoor play programming, outdoor play pedagogy, outdoor learning and/or experiences) in their calendar descriptions that we considered to have embedded outdoor play pedagogy in courses.

The administration of the online survey occurred during the summer of 2018. Based on the contact information that could be mined during the research period, 76 institutions received emails from the researchers to introduce the study and to provide access to the survey link that was hosted on the college's institutional research site.

The survey consisted of two sections. The introductory section solicited information specific to the participants' context, including the institution name, the number of faculty teaching ECE in the department, and the level of ECE programs offered (certificate or diploma). The second section was composed of eight questions, three of which were open-ended and five of which were closed. Two of the closed questions provided participants with the ability to elaborate or add comments. This paper addresses the research questions related to how faculty viewed pre-service ECE students in receiving explicit outdoor play pedagogy in their programs, current practices on how students are exposed to outdoor play pedagogy, and the types of resources needed to advance outdoor play pedagogy in college programs. These areas are important, as little is known about how much outdoor play pedagogy, including environmental education, is in ECE pre-service programs.

A qualitative research method for the survey component was used to draw upon the interpretive paradigm (Spradley, 1980) because of both the exploratory nature of the study and the need to describe what was found. Each researcher read the survey responses and took notes about the prevalent themes in the responses. They each formed thematic codes by analyzing the data separately. This process allowed the researchers to draw out the themes as well as to articulate both them and the topics embedded within the data. The data were entered into spreadsheets and were then examined line-by-line. Both researchers individually reviewed the data multiple times to gain a thorough

understanding of the information collected. The researchers then met to discuss their initial notes and to look for commonalities. Collective analysis occurred next. Throughout the analysis process, insight into individual and group themes embedded in the data (Braun & Clarke, 2006) surfaced.

Province or Territory	Number of ECE programs	Number of programs with explicit outdoor play courses	Number of programs with outdoor play embedded in courses
Alberta	10	1 (New since study)	5
British Columbia	17 (16 Anglophone and 1 Francophone curriculum)	2 (2 New since study)	1
Manitoba	3 (2 Anglophone curriculum and 1 Francophone curriculum)	0	0
New Brunswick	2 (1 Anglophone curriculum and 1 Francophone curriculum)	0	0
Newfoundland and Labrador	1 (1 curriculum for the province)	0	1
Northwest Territories	2 (1 Anglophone curriculum and 1 Francophone curriculum)	0	1
Nova Scotia	3 (2 Anglophone curriculum and 1 Francophone curriculum)	0	3
Nunavut	1	0	0
Ontario	24 (22 Anglophone curriculum and 2 Francophone curriculum)	2 (1 New since study)	9
Prince Edward Island	2 (1 Anglophone curriculum and 1Francophone curriculum)	0	0
Quebec	27 (2 Anglophone curriculum and 25 Francophone curriculum)	0	12
Saskatchewan	7	0	0
Yukon	1	0	1
TOTAL	**100**	**5**	**33**

Table 1. Colleges with explicit courses on outdoor play or embedded in program.

Results

At the time of the initial study (spring 2018), only one college was found to have an explicit course on outdoor play listed on their website. However, a second examination of the sites four months later (fall 2018) determined that four additional colleges had explicit outdoor play courses listed on their sites.

Thirty-three of 96 college websites had embedded outdoor play in their course calendar descriptions. Table 1 provides an overview of the number of colleges with explicit outdoor play courses and those with outdoor play pedagogy embedded in courses.

As for the survey, the return rate was 32% (24/76 institutions). Because of the timing of the survey occurring outside of the academic cycle, many faculty were not available to respond to the survey. There were a total of 28 participants, representing 24 different institutions: Four institutions had two participants respond to various aspects of the online survey. Information derived from the survey provides insight into how students in pre-service ECE programs are exposed to outdoor play pedagogy.

The first question explored was: *From a program perspective, do you feel it is important for pre-service ECE students to receive explicit curriculum on outdoor play pedagogy and achieve specific learning outcomes related to outdoor play pedagogy? Why or why not?* All participants indicated that it is important for pre-service ECE students to receive explicit curriculum on outdoor play pedagogy. For example, one participant noted that "outdoor play pedagogy tends to be underestimated in the field of ECE" while another noted that "it is extremely important for pre-service ECE students to fully comprehend the benefits and the importance of outdoor play and apply their knowledge to their practice through explicit curriculum on outdoor play pedagogy."

A variety of comments were made in response to the second part of the question, *why or why not*, with the most common theme expressed by the respondents being that outdoor play benefitted children's learning and development, including the way in which it contributed to physical literacy. Just over 15% of the participants suggested that outdoor play curriculum is important in pre-service programs because of how it supports children in connecting to their environment and developing a sense of environmental stewardship. One participant noted that:

> [m]any of the children that ECE students work with never participate in outdoor activities or spend free time in the forests or outdoor areas. Children then have not learned to respect the outdoors and the environment. If children don't respect the outdoor environment in which they live they may adopt an attitude that they don't care about preserving it or taking care of it.

Many participants suggested that outdoor play is currently restricted, and is not mainstream, but they were of the view that it should be part of pre-service ECE programs.

Figure 1. Where outdoor play is positioned in ECE programs.

In an effort to determine the types of resources and supports that college faculty may require to advance outdoor play pedagogy, the participants were asked: *Identify up to five new resources/supports that your program would benefit from in order to advance practice related to outdoor play pedagogy.*

There were diverse perspectives on the types of resources/supports that faculty felt would assist them in advancing outdoor play pedagogy. Some suggested they needed mentorship programs for faculty as outdoor play pedagogy is new to the literature and differs significantly from previous curriculum perspectives. Others suggested the need for textbooks, equipment, fact sheets, booklets, videos, and teaching guides. For example, one participant noted the need for a "textbook specifically about the pedagogy of outdoor learning and how it [is]

related to development," while another participant noted the need for "current educational/teaching videos demonstrating play experiences within Canada, in rural and urban settings."

Participants emphasized the need for workshops and conferences where faculty would engage in gaining the theory of outdoor play pedagogy and examine how it could be incorporated into courses. Also noted was an interest in: acquiring information about strategies to support children learning about environmental sustainability; gaining practical experience with outdoor play programs, such as with forest and nature schools; and having research opportunities for faculty and students.

No two pre-service ECE programs are the same. As Kaplan (2018) notes, there is very little data available that measure the quality of pre-service ECE programs either from a course delivery or practicum/fieldwork perspective. Most data available are based on self-reporting mechanisms developed by colleges and institutes themselves. In addition, the curriculum and delivery models are influenced by demographics, the nature of program funding, and provincial and territorial government early childhood policies, regulations, and standards. Furthermore, faculty backgrounds, diversity, experience with outdoor play, and program philosophies also play a significant role in shaping ECE programs (Beyer et al., 2015; Dietze & Kashin, 2018; Ergler et al., 2016; Van Nuland, 2011; Williams, 2016).

As discussed throughout this paper, the purpose of this study was to seek an understanding of how outdoor play pedagogy is positioned in pre-service ECE programs, where it exists, and how students acquire both the theory and its practical application. The findings of this study suggest that there is no consistent information about if or where outdoor play pedagogy is positioned in pre-service ECE programs across Canada. The positioning of outdoor play pedagogy in programs influences the focus taken in curriculum. For example, if outdoor play outcomes are embedded within a Health and Safety course, the core competencies are most likely to focus on safety strategies. By contrast, if the content is positioned in a play course, outdoor play pedagogy may be explored more broadly.

The results from the study support the perspective that if opportunities for and access to outdoor play are to increase in early learning programs, then it is important that pre-service ECE programs expand both the theory and the application of outdoor play pedagogy in their programs (Balter et al., 2018; Fletcher & Mandigo, 2012; Tsangaridou, 2017). It is not enough for programs to depend on class discussions, practicum, or fieldwork for students to acquire such knowledge and skills. Students require specific content, learning outcomes, and intentional teaching in an outdoor play pedagogy that includes a focus on nature and the environment.

The comments from faculty who participated in this study indicate that it is important for students to be exposed to outdoor play pedagogy. However, as

the data show, there is a disconnect between outdoor play's expressed importance by faculty and its evidence in calendar or program descriptions. One participant in the study suggested that students acquire their information on outdoor play "work[ing] with an agency around nature based learning and the environment." Another remarked that "students are encouraged to create outdoor play experiences for children." Although these are interesting comments, the survey results suggest that there is a lack of systematic incorporation of outdoor play in ECE programs in Canada that exceeds simply a lack of what is identified in the calendar course descriptions.

All faculty identified the need for outdoor play resources. At a minimum, basic resources should include fact sheets, texts, and videos, but they currently do not generally do so. In fact, there is a significant paucity of resources, including a lack of curriculum guides, of understanding of outdoor play pedagogy, of outdoor classroom space, and, as documented above, of texts or the people to support educators in gaining the level of knowledge, experience, and confidence required.

One of the positive findings from this study is that the participants were willing to offer views on the types of supports they would find helpful in advancing outdoor play pedagogy in their programs. For most college faculty, professional development is more of a personal practice than a workplace expectation or professional obligation (Haras, 2018). Funds available to engage in professional development for outdoor play pedagogy and curriculum development are limited or non-existent. There may be a need for new, innovative solutions for faculty professional development in outdoor play (Martin, Drasgow, & Halle, 2015). Although communities of practice and collaborative professional development models are emphasized as change agents (Douglass, Carter, & Smith, 2014; Jensen & Iannone, 2018), there is no research available to determine if this model has been used with faculty as it relates to outdoor play pedagogy. Douglass, Carter, and Smith (2014), emphasize that "[i]f we expect teachers who perform their work in highly interdependent teams to change and improve their teaching practices, we must provide professional development in ways that enable teaching teams, supervisors, and co-workers to learn together and implement change collaboratively" (p. 10). However, they found this was rarely the case: "almost three-fourths of the time (73.5 percent) that a program had anyone participate in a specific training, the programs had just one person participating" (Douglass et al., 2014, p. 8). Further research with college faculty is necessary to determine the types of professional development models that would support them in advancing outdoor play pedagogy. Ideally, professional development models will have experiential, collaborative, and research-based content delivered outdoors and allotted time necessary for reflection and dialogue (Casbergue, Bedford, & Burstein, 2014; Dietze & Kashin, 2014; Tsangaridou, 2017).

It is recommended that policy makers, researchers, college administrators, early learning and childcare program directors, educational consultants, and others who are working to advance outdoor play pedagogy include pertinent college and institutional faculty in the process. Emerging literature suggests that encompassing relevant faculty in such initiatives leads to a form of professional development. It may also be timely to advocate that college and institute faculty engage in outdoor play field research with the students (Catapano, 2005; Tsangaridou, 2017).

Limitations and Future Directions

This study revealed core themes within publicly-funded pre-service ECE programs in Canada related to outdoor play pedagogy. However, there were some limitations. First, as indicated above, the sample of respondents to the survey was small. Second, the study depended on the content available on college and institute websites. Course calendar descriptions on websites may not be updated as quickly as course changes are made in programs, and limited word counts may apply in any event, which would limit the amount of information shared with the public on websites. Third, the information on the study was forwarded to ECE program contacts available on college and institute websites and from emails. The survey may not have necessarily been received by the faculty who teach outdoor play curriculum. Recognizing that faculty have some academic freedom, it is possible that either more or less outdoor play pedagogy is delivered than what was discovered in this preliminary exploration. Consequently, we could not objectively determine the breadth and depth of outdoor play pedagogy in publicly-funded pre-service ECE programs in Canada at this time. Further research is required with college teams to better assess the situation.

Results from the survey can only be generalized from the core questions that were asked and analyzed. Further work should examine how college curriculum is designed, changed, and implemented.

In some ways it may be appropriate to regard our study as a pilot that was conducted with limited resources, but which nevertheless sheds light on the suspected patterns. We wish for more studies with faculty who teach outdoor play pedagogy or who have a desire to incorporate outdoor play pedagogy into pre-service ECE programs. Finally, it is worth repeating that college faculty require the time and space to interact with other college faculty, children, peers, and mentors in the outdoors not only in order to advance their pedagogy but also in order to develop the confidence to translate and amplify this experience into evidence-based design, implementation, and facilitation of outdoor play pedagogy.

Conclusion

This study may be the first of its kind in Canada to describe college faculty's views on how outdoor play pedagogy is positioned in pre-service ECE programs. The results of our preliminary study suggest that college faculty would benefit quite substantially if various forms of professional development and resources focussed on outdoor play pedagogy were available to them.

The current study also contributes to the emerging body of research calling for the advancement of outdoor play pedagogy through education. Our findings point to different perspectives on the precise placement of outdoor play pedagogy in pre-service ECE programs. According to the faculty consulted, outdoor play pedagogy may be delivered as a stand-alone course (embedded into courses such as play and child development), it may be learned directly during practicum or fieldwork, or it may be a combination of the foregoing.

This research project encouraged the entry of faculty voices into the types of resources they require to increase outdoor play pedagogy in pre-service ECE programs. A major concern is their availability, constrained as they might be by budget or logistics. College faculty identified a need for textbooks, videos, fact sheets, and research, along with specific professional development on outdoor play. The literature we reviewed above supports the identified lack of resources, which currently are inadequate, fragmented, or in some cases non-existent. Tsangaridou (2017) and Barr et al., (2014) conclude that professional development with teachers has the most significant impact on updating curriculum and teaching practice.

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Notes on Contributors

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Shifting Culture Towards Endorsement and Advocacy of Outdoor Play and Learning: A Collaborative Case Study with KidActive

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Abstract

Contemporary environmental crises are often attributable to a growing disconnect between humans and the natural world. One potential solution to this disconnect, as it relates to children, is the naturalizing of school playgrounds. This paper seeks to contextualize the impacts of a school ground naturalization program on the outdoor play and learning ecosystem. Drawing on results of a collaborative and qualitative case study, this paper highlights the ability of an outdoor play and learning spaces program to induce a culture shift toward the endorsement and advocacy of outdoor play and learning among school communities, catalyzing a need for supporting policy and regulation.

Resumé

Les crises environnementales de notre époque sont souvent attribuables à un éloignement de plus en plus grand entre l'humain et la nature. Pour aider les enfants à rebâtir ce lien, une solution possible est de ramener la nature dans les cours d'école. Le présent article vise à contextualiser les impacts d'un programme de naturalisation des terrains de jeu des écoles sur le jeu en plein air et l'écosystème d'apprentissage. S'inspirant des résultats d'une étude de cas collaborative et qualitative, le présent article met en lumière la capacité d'un programme de jeu extérieur et d'espaces d'apprentissage d'induire un changement de culture pour la promotion du jeu et de l'apprentissage extérieur dans les milieux scolaires, catalysant la nécessité de développer des politiques et des règlements pour appuyer cette démarche.

Keywords: naturalized playgrounds, outdoor play and learning, policy and regulations, case study, narrative, logic model, nature connection

Mots clés : naturalisation des terrains de jeu, jeu et apprentissage en plein air, politiques et règlements, étude de cas, narration, modèle logique, connexion à la nature

Introduction

A Need for Nature

The regressing state of the natural environment is one of the biggest challenges of our time (Dearden & Mitchell, 2009). Unfortunately, modern environmentalism, arguably the largest social movement to attempt to address environmental degradation, has been relatively ineffective in provoking substantial change. Indeed, we are still faced with numerous environmental issues that warrant significant concern (Burns & LeMoyne, 2001; Cianchi, 2015). It has been argued that these issues persist because of a growing disconnect between humans and the natural environment (Flowers, Lipsett, & Barrett, 2014; Liefländer, Fröhlich, Bogner, & Schultz, 2012; Nisbet, Zelenski, & Murphy, 2009; Pyle, 2003). Essentially, the contention is that as human connection with the natural world diminishes, we become increasingly negligent toward its preservation (Pyle, 2003). The requisite response is to foster a human–nature (re)connection, something to which Louv (2005) has brought marked attention. Louv's articulation of our contemporary "nature-deficit disorder" has provided much impetus for back-to-nature campaigns that advocate the necessity of human–nature connections and the relevance of direct experiences in nature for fostering health, well-being, and environmental stewardship.

Researchers, practitioners, and policy makers, among others, have heeded the call to devise ways to "most effectively and efficiently address [Louv's] nature-deficit disorder in an increasingly urban and technology-centered age" (Kuo, 2013, p. 184). In a systematic review of the literature pertaining to the notion of nature-deficit, Kuo (2013) developed several recommendations aimed at addressing it at a population level. Among the recommendations was the process of "green[ing] everyday places . . . includ[ing] residential areas, workplaces, and schools" (Kuo, 2013, p. 180).Of significance to this paper is the greening, or naturalizing, of school playgrounds and the outdoor play and learning opportunities these environments afford. White (2004) has highlighted the importance of such programs that target school grounds, emphasizing that in an age when children's

> access to the outdoors and the natural world [is] becoming increasingly limited or nonexistent, child care, kindergarten and schools, where children spend 40 to 50 hours per week, may be [hu]mankind's last opportunity to reconnect children with the natural world. (p. 3)

Opportunely, a budding global interest in school ground greening as a way of getting children back to nature has emerged (Bell & Dyment, 2006). Schools in various contexts have adopted the development of naturalized playgrounds—of "transforming hard, barren expanses of turf and asphalt into places that include a diversity of natural and built elements, such as shelters, rock amphitheaters, trees, shrubs, wildflower meadows, ponds, grassy berms and food gardens" (Bell

& Dyment, 2006, p. 16). Attention to naturalizing playgrounds has become particularly prominent in Canada, Australia, the United Kingdom, the United States, Scandinavia, New Zealand, and South Africa (Bell & Dyment, 2006).

Naturalized Playgrounds as a Potential Solution

With the emerging social interest in naturalized playgrounds, a growing body of literature explaining the benefits of these spaces has emerged. These benefits have been considered across a variety of research disciplines, resulting in a multitude of outcomes relating to individual children, individual schools, and broader communities (Bell, 2001; Lieberman & Hoody, 2000; Moore, 2014; Sobel, 1996; Taylor, Wiley, Kuo, & Sullivan, 1998). The association reported between nature-based play and learning and the healthy development of children is especially noteworthy in this literature. Raffan (2000) has explained, in his extensive review of literature pertaining to benefits, that school ground naturalization tends to have a trickle-up, or fountain, effect beginning with the child. For example:

> Improved academic performance as a result of involvement in a school ground naturalization project on the part of a student, may have direct effects on a teacher's enthusiasm for teaching, which in turn will affect the morale of the school, which in turn may increase enrollment or enhance public perception of the school, which in turn may encourage community members to become involved in school affairs or give them a heightened sense of community satisfaction. (Raffan, 2000, p. 6)

Other reviews and meta-analyses of the literature have pointed to a growing consensus among researchers that healthy developmental outcomes in children, including physical, cognitive, and social development, are supported through nature-based play and learning in naturalized playgrounds (Bell & Dyment, 2006; Heft, 1988; Raffan, 2000; Raith, 2015; Taylor & Kuo, 2006).

Despite the research contributions to understanding the positive associations between naturalized playgrounds and developmental outcomes (Bell & Dyment, 2006; Moore, 2014; Raffan, 2000), those championing the outdoor play and learning movement have expressed feeling restricted by a policy and regulation landscape that hinders the development and use of these important environments (Dyment & Reid, 2005; Spiegal, Gill, Harbottle, & Ball, 2014). For instance, fear of injuries and potential litigation often leads school administrators to adopt and adhere to Canadian Standards Association's (CSA) Children's Play Spaces and Equipment Standards (CSA, 2014), which do not currently support many naturalized playground features (Herrington, Brunelle, & Brussoni, 2017; Spiegal et al., 2014). Here in Canada, such hindrances have prompted gatherings and discussions among key stakeholders at events such as the Lawson Foundation's Outdoor Play and Early Learning Symposium held in September 2018 in Toronto. During the Lawson Foundation event, practitioners, researchers, policy makers, funders, consultants, advocates, and others explored ways in which

policy, research, and practice can inform one another to better support quality outdoor play and early learning opportunities. A discussion paper stemming from this symposium offered the metaphor of an "outdoor play ecosystem" to describe a collaborative approach that brings "all of the sectors, disciplines, and stakeholders into dialogue with one another in order to support high-quality outdoor play experiences for children" (Lawson Foundation, 2019). The Lawson discussion paper further highlighted the important roles that research, evaluation, and knowledge mobilization play within this ecosystem to inform and enhance practice, policy, and professional learning.

This paper aims to contribute to this outdoor play and learning ecosystem by reporting on a collaborative and qualitative research project that sought to contextualize the impacts of one particular case of stakeholders, places, activities, and outcomes in relation to naturalized playgrounds. In this paper, we draw on results captured through this research project, the purpose of which was to analyze the meanings and outcomes associated with children's nature-based play within the context of naturalized playgrounds. This paper highlights the ability of an outdoor play and learning spaces program to induce a culture shift toward the endorsement and advocacy of outdoor play and learning among school communities, catalyzing a need for supporting policy and regulation. In doing so, this paper contributes to understanding the significant role such programs can play in innovating or inspiring a shift within the outdoor play and learning ecosystem.

Methodology

A Collaborative Participatory Approach

Participatory research takes a bottom-up approach, which utilizes local priorities and perspectives to gain a better understanding or solution to those priorities (Cornwall & Jewkes, 1995; Grimwood, 2015). This project drew on tenets of participatory research to work collaboratively with stakeholders associated with a naturalized playground and outdoor learning program in designing and implementing the project so that it best suited their needs. In this case we worked closely with KidActive, a nationally registered charitable organization based in Renfrew County in Eastern Ontario. Founded to support the development of healthy children, communities, and environments across Canada, KidActive operates with the following mission:

> Through multi sector partnerships, collaboration, advocacy and both resource and program development, KidActive supports equitable healthy development and connects children and their families to safe, nearby built and natural environments that support accessible outdoor physical activity where they learn, play and live (KidActive, n.d.-a, para. 4).

With the ultimate vision of having every child be "active, healthy and connected to their natural environment" (KidActive, n.d.-a, para. 3), KidActive recognizes the right of all children to have the opportunity to develop fully across physical, mental, and emotional dimensions and to have a strong connection with the natural world.

Among KidActive's offerings is the Nature Play and Learning Spaces (NPLS) program. Through their NPLS program, KidActive collaborates with students, educators, parents, and communities within Renfrew County to naturalize school grounds and enhance children's play and learning experiences (KidActive, n.d.-b). The program is a one-year, school-based process that aims to "design and create spaces for inclusive, co-operative, creative, inspiring outdoor play and innovative outdoor learning opportunities" (KidActive, n.d.-b, p. 1). These yard enhancements involve manipulating the topography (e.g., adding grass and dirt mounds), sowing grass, planting trees, constructing mud kitchens, building outdoor classrooms, creating gardens, and/or bringing in loose parts—both natural (e.g., logs and stumps) and synthetic (e.g., shovels, pipes, and tires). NPLS mentors also provide tools and resources to help teachers fully utilize their outdoor spaces for play and learning.

With the NPLS program running for three consecutive years, associates from KidActive expressed a need to formally document the outcomes of their initiative. Director of KidActive, Shawna Babcock, and Education Coordinator at KidActive, Carly Meissner, discussed the consummate benefits of an evaluation of the NPLS program during our preliminary consultation, explaining that similar programs across Canada and internationally have received significant funding due in part to the fact that they had been evaluated and the outcomes and benefits of the program had been documented (personal communication, July 13, 2016). And thus, this initial phase in the participatory process yielded two key priorities for our research: 1) to develop an evaluation of the NPLS program and 2) to do so in a way that captured the stories of parents, teachers, and administrators who were familiar with the program.

Narrative Program Evaluation

Given the priorities of KidActive, our study adopted a narrative program evaluation approach. Program evaluation has historically been dominated by post-positivist thinkers attempting to determine the efficacy of a program through quantitative methods oriented toward the experimental model (Greene, 1994). However, as Greene (1994) has observed, there has been an advancement in "a diverse range of alternative approaches to program evaluation, including practical, decision-oriented approaches and approaches framed around qualitative methodologies" (p. 535). Costantino and Greene (2003) have explained that there is growing interest in using narrative inquiry in evaluative projects. Narratives reveal "contextual meanings and experiential insights" (Costantino & Greene, 2003, p. 37), which provide a more informative and multifaceted

evaluation than results from more quantitatively oriented methods such as surveys or questionnaires. Indeed, the stories that are elicited through narrative can provide a captivating evaluation that can be used to effectively promote the program and its benefits.

One evaluative tool that has been deemed useful in framing such narratives is the logic model. A logic model is a tool that managers and evaluators alike have often used to describe the assumptions of how a program works to achieve the initial, intermediate, and long-term outcomes it seeks to produce (McDavid & Hawthorn, 2006; Claphem, Manning, Williams, O'Brien, & Sutherland, 2017). These assumptions outline what is often referred to as program theory, the underlying theory that explains how a program works or is supposed to work (Cooksy, Gill, & Kelly, 2001). The theory weaves the various components of the model together into a causal chain. Essentially, "program theory provides meaning to the logic model by defining the connections among the four logic model elements" (Gugiu & Rodríguez-Campos, 2007, p. 346): inputs, activities, outputs, and outcomes. By describing the inputs, activities, outputs, and outcomes, it has been argued that these models can effectively tell the story of a program (Goertzen, Fahlman, Hampton, & Jeffery, 2003; McLaughlin & Jordan, 1999). Because of the unique ability of logic models to provide a straightforward framework for evaluation as well as tell the program story, it was decided to draw on this evaluative tool for this project.

Data Generation. Data for this project was generated by gathering individual stories pertaining to the lived experiences of those involved in the NPLS program through one-on-one, semi-structured, conversational interviews. Interviews were conducted between December 2016 and April 2017 with six teachers, six administrators, three parents, and one NPLS mentor. Interviews ranged from 30 to 70 minutes and were conducted by Zachary. By working with diverse perspectives of the program, we were able to develop a nuanced understanding of the meanings and outcomes of the NPLS program. A standard interview protocol was followed, whereby instructions were given to interviewees, questions were asked, and then participants were encouraged, through probing, to explain their ideas in more detail (Creswell, 2014). In these interviews, participants were asked to share stories about what these naturalized spaces meant to them and how the NPLS program had influenced them. They were also asked to communicate any perceived outcomes associated with their participation in the NPLS program. The conversational, semi-structured style of these interviews enabled participants to reflect on their experiences within the program, allowing them to set the pace for these discussions. Zachary's role as the researcher was to listen, clarify, probe, and possibly bring up topics relating to study objectives that had not arisen spontaneously in the course of the conversation. With participant consent, interviews were audio-recorded and transcribed verbatim. Data was also recorded through handwritten notes. Furthermore, member-checking was used to ensure that the data (i.e., stories) collected were true to how participants wanted to be portrayed.

To augment these stories, observational research methods were also used. This involved observing participants engaging with the naturalized playgrounds developed through the NPLS program (e.g., how students were using the playground, how teachers were using the spaces created) in order to help contextualize the interview participants' stories. In total, five unstructured, non-participant observations were conducted with one class at five different schools involved in the NPLS program. The observation protocol involved Zachary first introducing both himself and the research project to each class and inviting them to go out with their classmates and play as they typically would at recess. As the children played, Zachary recorded observations about how the students were using the space, the types of play he saw, and certain interactions that stood out to him. Additionally, Zachary sketched maps of the playgrounds and took pictures of the elements that had been installed as a result of the NPLS program. Directly following each of the observations, Zachary prepared a one-page summary of the experience.

Analysis. The interview data for the project was analyzed from a pragmatically oriented constructionist perspective (Crotty, 1998), which seeks to interpret the significances of meanings and perspectives of research participants. These interpretations were used to inform an understanding of the outcomes associated with the NPLS program. Data analysis was guided by what Polkinghorne (1995) has described as narrative analysis. This approach to qualitative analysis involves integrating the accounts of participants into an amalgamated narrative that provides a community story encompassing the voices of all research participants (Glover, 2003). Grimwood's (2016) exploration of the experience of mothers in an urban nature connection program is a notable example that illustrates such narrative crafting.

Because of the slightly unstructured nature of the narrative data, Ritchie and Spencer's (2002) framework analysis was used in conjunction with Polkinghorne's (1995) narrative analysis. This blending of analytical approaches provided a method for sorting and interpreting the data, while maintaining the narrative accounts of participants. Framework analysis involves moving through a series of five stages to organize material according to key themes: familiarization, identifying a thematic framework, indexing, charting, and interpretation (Ritchie & Spencer, 2002, p. 310). This process proved useful because it allowed the data to then be mapped to the elements of the logic model (i.e., inputs, activities, outputs, and outcomes). A more fulsome explanation of the analytical approach used for this project is reported elsewhere (Stevens, 2017).

Through a blending of narrative analysis, framework analysis, and logic modelling, Zachary was able to craft a narrative that was framed by a program logic model, whereby participant stories were synthesized into passages that coincided with different elements within the model. This blended approached allowed for the community story to be structured and presented in a way that was beneficial from an evaluation perspective (i.e., program logic model), while

also staying true to certain characteristics of narratives that Glover (2004) and Grimwood (2016) have maintained are key to good storytelling (e.g., chronology, context, characters, plotline, etc.). Though this evaluative approach differs from traditional narrative analysis that Polkinghorne (1995) and Glover (2003) have discussed, it proved to be useful for capturing the individual accounts of NPLS participants and incorporating them into an amalgamated narrative that was able to address the various dimensions under study.

Results and Interpretations

Storying the Logic Model

A logic model was created by analyzing and interpreting participant narratives and observational data using an evaluative lens. Figure 1 illustrates the logic model for the NPLS program. Within each of the logic model's categories are thematic groupings that attempt to encapsulate key narrative threads that emerged from participant stories and observational data. For the purposes of this paper, the model is best considered a heuristic; that is, a visual representation that provides some structure and order to the data in a way that allows audiences to see and understand how the themes relate to one another. A comprehensive overview of these themes and their relationship is available elsewhere (Stevens, 2017). In this paper, we aim to provide an overview of the initial and intermediate outcomes that were perceived to contribute to the long-term outcome of a culture shift—one we suggest is driving the advocacy and endorsement of outdoor play and learning as well as the need for supporting policy and regulation.

Initial and Intermediate Outcomes

To better understand how KidActive has worked to induce a culture shift toward outdoor play and learning advocacy among school communities, it is necessary to understand the initial and intermediate outcomes of the program that have facilitated this shift. Initial outcomes refer to the immediate outcomes that participants observe as a result of the NPLS program, and typically relate to changes in in awareness. Most notable in this regard were the initial outcomes of 1) an increase in knowledge and understanding of the value of outdoor play and learning and 2) a shift in perceptions pertaining to the schoolyard and the possibility of making changes to it.

The initial outcome of increased knowledge and understanding was apparent throughout the stories shared by participants. Most notable were stories of increased understanding of the value of outdoor play and learning. What became apparent when talking with participants was that the presentations, committees, and relationships that formed throughout the facilitation of the

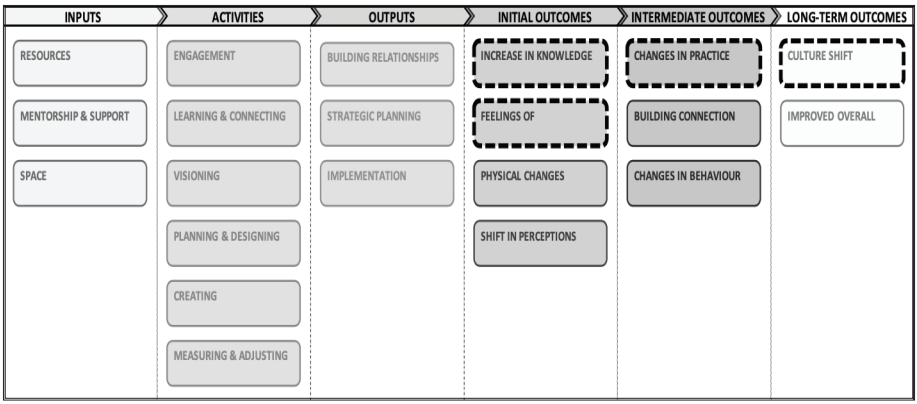

Figure 1. NPLS Program Logic Model. This figure illustrates the program logic model developed from participant stories. Those highlighted in black outline are discussed in this paper.

program sparked a dialogue about the value of outdoor play and learning. As Heidi (NPLS mentor) explained:

> An interesting thing that I see being impactful about working with schools to develop these spaces is that they start to build relationship and connection within that school community around the importance of [outdoor play and learning] . . . I've watched shifts in how teachers are valuing it.

This shift in the school community toward valuing outdoor play and learning was evident when Donna (school principal) related how her school now communicates with parents about taking their children outside at school, telling them, "'We really value the time that children spend outside. . . . So we're going to be sending your child out if it's raining lightly . . . if it's cold . . . we're going out.' So parents became aware that that's what we expect." The attribution of inherent value to outdoor play and learning and the development of a sincere appreciation for the same were evident in discussions with participants. This development of value and appreciation is a critical stepping stone for the future advancement of a broader culture shift toward advocacy for outdoor play and learning. It is also foundational to the development of supportive policy.

Another initial outcome related to the perceived culture shift is a positive change in perceptions within the school community about the possibility of schoolyard transformations. Notably, when asked why she felt these changes in attitude had occurred, Nicole (school teacher) explained:

> It's because we have accomplished something that we didn't think we would ever accomplish. There was a lot of negative talk around the how, but we now have a

> grass area. . . . This has lifted our morale and made us think that we are capable of more.

This success resulted in shifted perceptions among those in the school community who were initially doubtful about the ability of the NPLS program to influence lasting change, which created a more optimistic environment. This optimism is necessary for fostering a culture change in which advocacy for outdoor play and learning is front and centre. Without a shift in perceptions about the possibility of schoolyard transformations, it would be difficult to advocate for these enhanced spaces. Participants appeared to feel motivated to think creatively about their schoolyard transformations and advocate for policy to support the use of these modified spaces.

Participants perceived these initial outcomes leading to intermediate outcomes (i.e., changes in behaviour). Of particular interest for the purpose of this paper is the intermediate outcome of changes in teacher practices. What became apparent when talking with participants was that, with an increased understanding of the value of outdoor play and learning, some teachers were more inclined to take their students outside. For example, Joyce (school principal) explained, "a lot of teachers are accessing the space," adding, ". . . there's always somebody out there . . . teachers are out. Teachers aren't afraid to get out and enjoy the space with the kids." Sophia (school principal) echoed these sentiments when she said, "Definitely they're using it for not just recess time but instructional time too. . . . They're out every other day. They're using the yard."

Changes in behaviours and teaching practices were also evident in Zachary's observation of a particular Grade 3 classroom:

> [A student] turned over a rock and found a small dark salamander. . . . He carried it back to show the rest of the class . . . we headed inside bringing the salamander in a plastic tub lined with leaves, grass, and sticks the children had collected. The teacher gathered the class in front of the projector and began searching salamanders on her computer. She brought up a website that had a list of all the different salamanders that could be found in Ontario. She took the class through pictures, descriptions, and interactive maps to try to determine what kind it was. . . . After learning about the different salamanders it could be, they released him back in the forest. The teacher then read to the class a book called *The Salamander Room*, a story about a boy who finds a salamander out in the woods and wants to bring it home.

This observation is an excellent example of the inquiry-based learning that one teacher started to incorporate as a result of their participation in the NPLS program. These changes in behaviours and practices are yet another example of a movement toward a culture shift and will likely require supporting policies once the behaviour change is widespread and adopted by more educators.

Fostering a Culture Shift

Beyond the initial and intermediate outcomes, discussions about the impacts of the NPLS program with participants revealed that the program was helping to induce a culture shift toward the endorsement and advocacy of outdoor play and learning. Participants spoke about this culture shift as being a gradual, sometimes subtle one. For example, Donna (school principal) explained:

> trying to move forward with some of these things was really a paradigm shift. It was trying to move from this safe kind of 'put your kids in a bubble . . . don't let them get hurt . . . you're going to get sued,' into, 'Let the kids play!' . . . So there has absolutely 100 percent been a culture shift. When you start looking back and reflecting you think, 'Wow, we've come a long way!

When asked if she had any examples that track the shift in culture that participants were reporting, Heidi (NPLS Mentor) said:

> There's confidence and support for teachers like Cheryl at Seventh Street to take her students out daily to teach. . . . At Sixth Street, Kindergarten teachers are taking their classes outside daily to a forest space that they have. There are the Third Street teachers as well, walking with Kindergarteners to a wooded space every Friday for Forest Fridays.

This shift, though seemingly gradual and sometimes hard to notice, appears to be occurring at all levels within the school community. Nicole (school teacher) spoke about how people at the School Board are starting to grasp the importance of outdoor play and learning:

> I think we're definitely talking about it more. And I think the School Board is more aware of it as well because KidActive has been so vocal I guess in our area and getting in our schools. . . . So I think they realize we want more of these natural play spaces.

Lilly (parent) spoke about how her children's principal recognizes the importance of this culture shift: "Yeah, Jason is really encouraging which is wonderful! He gets it. He understands." Joyce (school principal) also talked about how her staff have gotten on board:

> They're all in . . . teachers love it; they've seen the benefits and they're using the yard, so you know they're in. . . . They're keen and they're supportive and they just want the best for the kids. They really do.

And finally, Cheryl (teacher) spoke about the overwhelming support she has been seeing from parents in the community:

> So [the parents] were all excited that [the children] were getting chances to get outside and get fresh air. I think as parents, I think we know that kids need to be

> outside playing more and that we know they need more of that free time, that fresh air. . . . So I think they're appreciative of the fact that they're getting more outside time.

These findings speak to the perceived culture shift toward the endorsement and advocacy of outdoor play and learning among members of the school community as a result of the NPLS program. Stories of parents volunteering their time to sit on school councils to ensure their children have access to outdoor play and learning opportunities, teachers doing what they can to take the curriculum outdoors, and principals using their power as administrators to hold the necessary space to encourage, support, and nurture the changes brought about through the NPLS program signify that a shift is beginning to happen. These findings are consistent with the work of Dyment (2005), who has articulated a need to shift culture if naturalized playgrounds are to become commonplace. However, this finding was tempered with stories of frustration about feeling constrained by school board regulations and policy in terms of what was allowed in the schoolyard. These findings support Dyment (2005) who has called for a "shift in the culture of schooling" (p. 47), arguing that the institution of education has not placed enough value on outdoor play and learning, which has impeded the progress of naturalized playgrounds. Lastly, results highlight the need for a culture shift to be followed by supporting policy to ensure that access to outdoor play and learning opportunities keeps up with the momentum being generated by the culture shift.

A Need for Supportive Policy and Regulation

Results from this study indicate that inconsistent policy and regulation in regard to outdoor play and learning environments made it very difficult for those trying to develop these kinds of spaces. Participants expressed difficulties when trying to implement their vision of what they hoped the schoolyard would become. These difficulties often stemmed from a lack of policy and regulation with respect to loose parts and other natural play features. As Nicole (school teacher) explained:

> since the use of loose parts and natural elements is more new to school playground design, there are not a lot of regulations directing how they can and should be implemented. So, you get conflicting messages. You're not told not to put these things in, but you're told there may be a problem with them in the future. . . . So they don't know . . . I actually talked to the lady [from the School Board] . . . and she was like, "It's just so new for us, we don't know what's acceptable and what's not."

Participants were very discouraged by the restrictive nature of current schoolyard policy and regulations that have prevented or limited what they were able to achieve in their spaces. It is not our intention, however, to point blame at the school boards. After all, they are merely adhering to the recommendations set out by their insurance companies, which suggest that all playgrounds meet

the CSA's Children's Play Spaces and Equipment Standards (OSBIE, 2010). However, as Herrington, Brunelle, and Brussoni (2017) have warned, these standards "are not intended to address play value or child development" (p. 145). In fact, they are not even intended to be the steadfast policy that litigation cases misinterpret them to be (Spiegal et al., 2014). They are simply voluntary standards that provide "guidance on requirements for the type of materials and equipment that promote optimal safety in playspace layouts" (CSA, 2014 as cited in Herrington et al., 2017, p. 145). Unfortunately, the promulgation of these standards as requisite playground policy has resulted in playgrounds being a far cry from what they should be: a stimulating and engaging space for all children to learn, play, and develop (Spiegal et al., 2014).

Participants further speculated that lack of formal policy and regulation was attributable to a culture of fear about safety and liability. Penny (school teacher) described this fear at the regulatory level:

> But it does become a battle with the Plant Department. . . . "Is it going to be safe? Is it going to be stable?" They want the companies that come in and install [the playground features] so that the liability is taken off the Board.

Nicole (school teacher) reiterated this barrier when she explained:

> So there have been some challenges with respect to . . . the School Board. . . . We had to talk to them because we were [naturalizing our playground] . . . things had to be approved . . . they were very unsure about even the loose parts. It's new to them and they are always concerned about safety, they're concerned about lawsuits. . . . "Are we being negligent in what we're allowing out there?" . . . this was a real concern.

Such concerns expressed by regulatory bodies can often inform the concerns of teachers and others who interact directly with the children. This was made evident when Nicole (school teacher) expressed: "There is less enthusiasm from safety officials as they are concerned with lawsuits . . . but their lack of enthusiasm is often discouraging and can make people fearful of change."

Alternatively, some participants felt as though the culture of fear and emphasis on safety among parents is what informs strict safety regulations, perpetuating this barrier to building successful outdoor play and learning environments:

> I think that we actually really need to start looking at . . . and tackling this issue of parents and liability and the amount of fear and resistance that it creates within the school setting. . . . We're placing more value on fear of the parents than on what we inherently know is good for children. (Heidi, NPLS mentor)

Thus, the objective becomes about encouraging a shift within the culture of parenting and, arguably, broader society because parents hold a lot of power in terms of what they feel is safe and acceptable for their children's play and

learning. This power dynamic was believed to inhibit the development of naturalized playgrounds. Such perceptions are apparent in the literature as well. For example, Tovey (2007) has explained that teachers are often anxious about accountability and litigation in today's risk-averse societies. Consequently, in conjunction with the culture shift previously discussed, the development of more formal outdoor play and learning policy within the education system that would help to dispel such anxieties appears to be needed in order to have naturalized playgrounds become more commonly integrated into schoolyards.

Although the NPLS program does not appear to have produced any formal policy document pertaining to outdoor play and learning, what the program has done is begin to foster a culture shift among the school community to advocate for and endorse outdoor play and learning. This has inspired action, which in a broader understanding of the word policy, could be considered as such. In other words, the support of developing outdoor play and learning spaces in schoolyards and the types of play that come with it is indicative of an emerging outdoor play and learning policy. For example, Heidi (NPLS mentor) mentioned, "At Sixth Street they're letting kids explore puddles and they're sending notes home and having conversations with parents to send in extra clothes in case kids get wet, telling them the importance of this type of play." Though not a formal school policy, this activity is nevertheless the result of what can be called a policy in the sense that it is a conscious choice made by the school to allow children to explore puddles if they choose. These types of informal policies were mentioned throughout the interviews. Other examples include Fourth Street and other schools allowing their students to play with sticks at recess, the principal at First Street asking her staff to increase the amount of time they spend outside with students, and the Kindergarten team at Sixth Street allowing their students to climb trees when out on their daily forest visits. In this latter instance, Theresa and Katrina (school teachers) explained that, "when climbing trees, we have agreed on a height that won't give us too many stressful thoughts." So rather than prohibiting tree climbing, they have a "policy" that allows children to play in a way that stimulates and challenges them. Thus, while the growing culture of advocating for outdoor play and learning is beginning to spur formal policy into existence, it is simultaneously working to encourage the development of informal rules, actions, and guidelines that comprise what we perceive to be a growing base of outdoor play and learning policy in school communities.

What is needed now is formal support, originating in policy and regulation from within the education system, that carries forward this momentum. We must continue to produce research that reinforces the notion that naturalized playgrounds provide tremendous benefit to children. In doing so, we can begin to shift the perception of the relevant bodies whose concerns about risk of litigation currently outweigh their understanding of the benefits of outdoor play and learning stimulated in naturalized playgrounds. In the meantime, organizations such as Evergreen (www.evergreen.ca) and Natural Learning Initiative

(www.naturalearning.org) have developed resources that can provide guidance to those who want to make changes to their schoolyards, while still working within the current schoolyard policy and regulations:

- *The Learning Grounds: Guide for Schools*
- *Nature Place & Learning Places: Creating and Managing Places Where Children Engage with Nature*

More information can be found on their websites.

Conclusion: Towards an Ecosystem Lens

Through mentorship, support, and the creation of a space for those with shared values and visions of outdoor play and learning, KidActive was able to nurture the development of a culture shift toward outdoor play and learning advocacy. Despite this culture shift, participants in this study felt a lack of support in terms of policy, regulation, and training in order to provide quality outdoor play and learning experiences. This research contributes to the greater outdoor play and learning ecosystem by highlighting the willingness and readiness of outdoor play and learning advocates to be adequately supported by policy, regulation, and training. This research demonstrates that a culture shift is not enough to provide exceptional outdoor play and learning opportunities for children and calls upon policy makers and regulating bodies to support the needs of those who are eager to facilitate these experiences. This research also helps to illustrate the relevance of applying an ecosystem lens to the outdoor play and learning domain in that it demonstrates the reality of the interconnections between advocates, practitioners, policy makers, and researchers. In order to continue to advance the outdoor play and learning movement, all stakeholders must collaborate with one another, each helping to inform and inspire the other when working toward the betterment of outdoor play and learning experiences for children.

Notes on Contributors

Zachary M. Stevens graduated from the University of Waterloo with a Master's degree from the Department of Recreation and Leisure Studies. His research interests include nature-based play and learning, nature connection, and program evaluation. Guided by these passions, Zachary now works for Evergreen developing, managing, and evaluating outdoor play and learning opportunities for children and families. Contact: zstevens@evergreen.ca

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Shawna Babcock is an educator connecting and learning outside with kids in local natural spaces in the Ottawa Valley. She was a co-author of the Position Statement for Active Outdoor Play in Canada and a founding member of Outdoor Play Canada. She is the founder of a charitable organization KidActive - Healthy Children Communities & Environment and has worked for more than 15 years in healthy child development community, health equity, and education. Most importantly Shawna is the parent of 3 amazing children raising them in the Ottawa Valley and playing as much as possible on and in the rivers, trees, and hills that surround them.

Carly R. Meissner graduated from Lakehead University with an honours in Outdoor Recreation, Parks and Tourism and a Bachelor of Education. Carly is passionate about connecting people to the natural world, encouraging a place of curiosity. She invites people to step into this place through her work as a facilitator for the Child and Nature Alliance of Canada and at Shaw Woods Outdoor Education Centre in Renfrew County where she lives. Contact: cmeissner@childnature.ca

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Artist's Statement

Logan Root-Maher
Age 4 in Spring 2019 (6 now)
Casa (Junior Kindergarten)
Kawartha Montessori School

In conversation with his Dad (Dr. Pat Maher)

Pat: Tell me what you've drawn in this picture?

Logan: Me and my two friends, playing outside at my school, and in the woods. There's sunshine and trees; a deer and ducks.

Pat: Why do you like to play outside?

Logan: Because you can play with sticks and other things. And because it's super warm and sunny. And when it's winter you can play in the snow.

Pat: Do you like the outdoors more than playing indoors?

Logan: Yeah, because you can run around and build forts, and roll all around. Indoors you can't do that because it's a smaller space.

Pat: What's your favourite things about playing outside?

Logan: Running, climbing trees; you can play whatever you want.

Reviewers for Volume 23 (2)

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