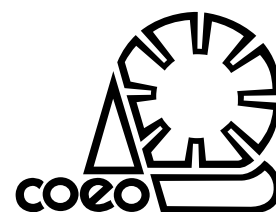


Pathways

THE ONTARIO JOURNAL OF OUTDOOR EDUCATION
Fall 2016, 29(1)



Pathways

COEO

Formed in 1972, the Council of Outdoor Educators of Ontario (COEO) is a non-profit, volunteer-based organization that promotes safe, quality outdoor education experiences for people of all ages. We achieve this by publishing the *Pathways* journal, running an annual conference and regional workshops, maintaining a website, and working with kindred organizations as well as government agencies. Members of COEO receive a subscription to *Pathways*, as well as admittance to workshops, courses and conferences. A membership application form is included on the inside back cover of this issue of *Pathways*.

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Pathways

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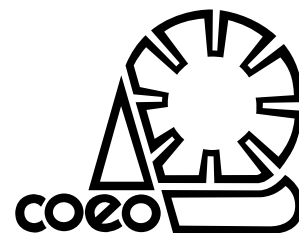
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The Council of Outdoor Educators of Ontario

I am pleased to be presenting this non-themed issue of *Pathways*. After attending several provoking sessions at various conferences in 2016, I was inspired to solicit work that speaks to future directions of outdoor learning and education for our readership.

While this issue of *Pathways* appears discursive, it is balanced. As the typical aim of our non-themed issues is to showcase the diversity of interests and geography of our contributors, in the following pages you will find text that addresses pedagogy, research methodology, social justice, place and belonging. The breadth of this issue reflects the impact that *Pathways* has not only here in Canada, but its reach across oceans and continents. With contributing authors from all over the globe, there is aesthetic fusing of thoughtful theorizing that is present in the pages that follow.

Equally important to this issue is the art. As a researcher who works at the margins and liminal spaces of outdoor learning and the arts, I invite you to carefully consider the text relative to the art. The art in this issue intervenes with perception and consciousness. In other words, through art, we as humans and learners can perceive something new, something new differently, or something familiar in a new way. Montreal artist Julian Yohannes (see Sketch Pad below for more information) has kindly contributed several evocative and generative pieces to this issue.

The first feature column of this issue is written by Jessica Ruglis. Interestingly, Jessica deviates from the traditional tropes that encircle outdoor learning and wellbeing while proposing several considerations for educators in relation to social justice and participatory action research. Next, Costantinos Yannaris,

traces the interdisciplinary nature of place-based learning, environmental education and holistic education. Looking forward with a focus on transformative pedagogy, Constantinos hints at the importance of local communities in the educational process. In the third article of this issue, Saba Din provides wonderful rationale for taking math education beyond the boundaries of traditional schooling. Saba weaves together theory and practice in a way that inspires me to re-learn math. In their co-authored piece, Yi Chen Jade Ho and Stefanie Block write about educational belonging and relationships to the more-than-human world. Drawing data from parent participants of Maple Ridge Environmental School in British Columbia, this article braids reflective and reflexive narratives about how educational journeys can shape future and ongoing experiences.

In the "Intersections" column, Joel Barr and Alex Walmsley co-author an article about place, belonging and writing in a community environmental leadership context. Shifting to a practitioner piece, Kyle Clarke uses careful reflection, conceptualization, and clean prose to elucidate professional development of emerging wilderness trip leaders through a community of practice approach: A must read for anyone who has worked (or plans to work) in tripping. Lastly, xavier o. datura brings the sporadic "Wild Words" column back into the mix with a redolent poem.

While stories are autobiographical, they are also relational. I hope that in this issue you will find relations of community and hope.

Thank you for your readership.

Mitchell McLarnon
Guest Editor

Sketch Pad – Sketch Pad: Julian Yohannes was born in raised in Montreal, QC. His art is inspired by people, nature and the synergies he experiences. His artwork can be found on the cover and pages 5, 18, 21, 26, 29, 30, 32, 33 and 34. https://www.instagram.com/julianyohannes_art/ and <https://julianmeridart.wordpress.com/>.

Our yearly dose of rejuvenation and inspiration for starting the school year was infused into our membership at the COEO annual fall conference on September 23–25 at Camp Wanakita. Against a beautiful backdrop of smooth waters, sunshine and a hint of fall colour, our conference participants delighted in the opportunity to learn some hands-on, traditional skills, and to connect with others in the profession. A common refrain we heard repeatedly over the weekend was the relief we all feel when gathering together, amongst “our people,” those who share a deeply held love of nature and passion for getting people outside. Special thanks goes to our hard-working conference committee: Chairs Emma Brandy, Shawn Stetson and Meredith Davy, as well as Lindsay Kemble, Robynne Howard, Doug Jacques, Ian Paton, Shauna Kochen, Natalie Kemp, Walt Sepic, Kyle Clarke and James Innes.

The Annual General Meeting (AGM) is the heart of our fall conference, and this year's AGM saw the election of three new Directors at Large. We welcome Jamie Innes, Natalie Kemp and Liz Jankowski. Liz Kirk, Ben Blakey, Minka Chambers, Bill Schoenhardt, Emma Brandy and Allyson Brown will be continuing to serve on the board along with me, and we welcome them back! We also extend our gratitude to those who served last year and have now left the board: Shawn Stetson, Kristen Alderson and Nazreen Subhan (who will be staying on as a valued volunteer to mentor our new Directors at Large!).

At the fall gathering, we had several members stepping up to say they would like to help with COEO efforts, either in a board capacity, working on *Pathways*, taking on a special project, or helping with upcoming conferences. Karen O'Kafka will be our Volunteer Coordinator again this year, and she is the person to contact if you wish to assist with any of COEO's efforts. We'd love to hear from you!

Make Peace With Winter is the next event for which we are recruiting committee members. This January conference is quickly

becoming a favourite gathering for our winter-loving members, and our Chair, Brooke Jones, will be looking for committee members. If you are interested in helping, please let Volunteer Coordinator, Karen O'Kafka, know. This year, Make Peace With Winter will be held at Bark Lake Leadership Centre on January 13–15, 2017. Watch for details, and save the date!

Our membership base has grown in the past year, for which we are grateful. If you have not renewed your membership yet this year, please do so soon. Please also encourage your colleagues and organizations to renew. Keeping COEO strong with a large membership base lends credibility to our profession, and allows us to connect all of our members to more and more resources and opportunities! Plus, there are numerous benefits to you (gatherings, e-newsletter, *Pathways*, and more!). If you are a student member, please provide us with an email address that you will maintain beyond this membership year so we may continue to communicate with you once you move on from school.

Our Bursary Fund continues to grow. Proceeds from the conference fundraisers, along with gear sales and private donations have planted a healthy seed. We are still pursuing corporate and individual donations to grow this fund to a base of \$20,000 so we may continue to support those who could not otherwise afford our events, along with efforts to expand the diversity of our membership. Please consider donating. Our website will soon include an option to donate.

Winter is coming. Put on a cup of hot cider, hunker down, and enjoy this edition of *Pathways*!

Deborah Diebel
COEO President

Theorizing Participatory Action Research and Outdoor Experiential Education: Pedagogy for Engagement and Well-Being Through Social Justice

By Jessica Ruglis

This article theorizes integrating participatory action research (PAR) into outdoor experiential education (OEE) as a mechanism for transforming OEE into a more social justice-oriented, decolonizing and inclusive discipline—one that privileges the voices of those traditionally excluded from OEE (read: non-white, non-heterosexual), and their silenced, yet interconnected, histories with/of the environment, the outdoors, the land. This paper asks what a dialogue with PAR and OEE might reveal for “education as the practice of freedom” (hooks, 1994) and for OEE as the practice of liberation from pervasive suffering (Dumas, 2014), injustice and unfairness in schools (Ruglis & Vallée, 2016) and across contexts of youth development.

What does OEE look like with a small semantic shift? What does OEE look like if we consider the environment not as something to be taught or mastered, but to be liberated and learned from and in communion with? What happens when we transform outdoor experiential education into outdoor experiential engagement? Moving to engagement means moving to a more participatory, relational process. Remaining static in “education” suggests an institutional structure, with oppressive histories for those most excluded from OEE. Moving from a model of education to engagement, and especially one of *critical youth engagement* (Fox, Mediratta, Ruglis, et al., 2010), the goals of OEE may become altogether more possible as the liberation of the increasingly dwindling (and commodified) environment is inextricably linked to the liberation of bodies and lives that are now so often excluded from participation in OEE spaces and activities (Warren, Roberts, Breunig & Alvarez, 2014). These include indigenous, queer, trans, immigrant, black and brown, and dis/non-abled bodies. The future growth of OEE as a discipline should not, and cannot, be separate from the white settler, supremacist, and heteronormative histories that have colonized land (indigenous

peoples of North America), farming (slavery), and outdoor education (e.g., Boy Scouts). In conceiving of OEE as something more akin to *outdoor experiential engagement*, developmental possibilities for OEE are revealed, as engagement (participation) for young people in meaningful activities that are linked to social change and personal aspirations and skills essential for healthy, positive development. So too is outdoor experiential engagement situated within disciplines of youth engagement (Sherrod, Torney-Purta & Flanagan, 2010), youth development (Furlong, 2013; Eccles & Roeser, 2011; Akom, Cammarota, Ginwright, 2008; Roth & Brooks-Gunn, 2004; Freudenberg & Ruglis, 2007), child and adolescent development (Center for the Developing Child, 2010; Nakkula & Toshalis, 2010; Lesko, 2012; Adams & Berzonsky, 2005; Rew, 2005), emerging adulthood development (Abo-Zena & Pavalow, 2016; Lollar, 2010; Arnett, 2000, 2003; Smith, Christoffersen, Davidson, & Herzog, 2011), youth theories of change (Tuck & Yang, 2014), and within frameworks of social determinants of health (Mikkonen & Raphael, 2010) and human flourishing (Nussbaum, 2000; Wolff, 2009; Wolff & de Shalit, 2007), which have integrated PAR. Participation in PAR can be a pedagogical process that facilitates well-being and wellness for child and adolescent development (Prilleltensky, 2008, 2010, 2011; Prilleltensky & Prilleltensky, 2006) and attempts to grow OEE into a tool for social justice. A PAR approach to OEE could also be used to create dynamic programs that help promote healthy high schools (Ruglis & Freudenberg, 2010) and youth development.

A Brief History of Participatory (Action) Research

Participatory Action Research (PAR) with children and youth is at the intersection of child wellness and social inclusion.

(Prilleltensky, 2010, p. 238)

PAR has its origins in the developing world of the 1960s. It began as a process of involving citizens in research and community development and planning processes (e.g., participatory planning, participatory development). It explicitly aims to achieve social change. In South America, PAR has its roots with Paulo Freire and Orlando Fals Borda, and in South Asia with Arjun Appadurai. It also emerged out of Africa, North America and Europe. PAR is preceded by Kurt Lewin's work in action research in the 1940s within social psychology.



PAR researchers move their positionality to a dynamic insider–outsider state and conduct research *with* communities, not *on* them. Communities are active participants, joining the research process, rather than serving as objects of study. According to Torre and Fine (2006), “PAR recognizes that those ‘studied’ harbor critical social knowledge and must be repositioned as subjects and architects of research” (p. 271). PAR is grounded in challenges to ways of knowing, ways of being, expertise and power. It offers an alternative paradigm in which social and research hierarchies are dismantled through restructuring power dynamics (see Stoudt, 2009; Payne & Hamdi, 2009) and “repositioning ethical commitments [of] participatory action research as a relational

praxis of social change” (Cahill, 2007). PAR is an alternate epistemology; it uproots beliefs in what constitutes knowledge, how and what knowledge is produced, where expertise lies and who is involved in both (see Harding, 1998; Smith, 2012). Youth participatory research (YPAR; Cammarota & Fine, 2008; Ruglis, 2011) and critical participatory action research (CPAR; Torre, Fine, Stoudt & Fox, 2012) have been more recent developments in the field of PAR. The Public Science Project, an international leader in PAR, states

We believe social science can play an important role in the struggle for social justice. Participatory Action Research provides a critical framework or making science—systematic inquiry and analysis—a public enterprise. Allied with feminist, critical race, and indigenous theory, PAR is an approach to research that values the significant knowledge people hold about their lives and experiences. PAR positions those most intimately impacted by research as leaders in shaping research questions, framing interpretations, and designing meaningful research products and actions. (<http://www.publicscienceproject.org/>).

Following advances in PAR, during the 1980s and 1990s the field of public health developed an approach called community based participatory research (CBPR). CBPR is

A collaborative approach to research that equitably involves all partners in the research process and recognizes the unique strengths that each brings. CBPR begins with a research topic of importance to the community and has the aim of combining knowledge with action and achieving social change to improve health outcomes and eliminate health disparities. (<http://www.kellogghealthscholars.org/about/community.php>; based on the definition in Israel, Schulz, Parker, & Becker, 1998).

While the focus of this paper is on PAR as a method for OEE, CBPR literature may be relevant for some OEE goals. There are ten principles of CPBR (Minkler & Wallerstein, 2008):

1. recognize community as a unit of identity
2. build on strengths and resources within the community
3. facilitate collaborative, equitable involvement of all partners in all phases of the research
4. integrate knowledge and action for mutual benefit of all partners
5. promote a co-learning and empowering process that attends to social inequalities
6. involve a cyclical and iterative process
7. address health from both positive and ecological perspectives
8. disseminate findings and knowledge gained to all partners
9. involve a long-term commitment by all partners
10. focus on issues of local relevance

A PAR approach to OEE would aim to improve OEE for everybody, and in the process reveal the fault lines of critical social and historic inequities. These include questioning the epistemological foundations of OEE itself to ask, what does OEE look from a critical disabilities perspective? OEE is grounded in practices, and therefore assumptions of able-bodiedness, making it exclusionary by definition. What does OEE look like for people who have no sight or hearing, or are only mobile through wheelchairs or assisted devices? The continued exclusion of such groups over time creates a narrative of unwantedness, of less-than-ness. PAR is a solution to the inclusion of all groups in the educational opportunities for outdoor experiential learning, which is essential for well-being. Do non-abled peoples not have the same rights to well-being? PAR is not only a solution for helping to understand who is missing from current OEE, but it is also essential to its transformation; engaging people who have traditionally been excluded from OEE will reveal exactly what it takes for their inclusion. PAR is the process for moving OEE into inclusive outdoor learning. So too is PAR the process for moving OEE from its current status as an often replicator of privilege and power to become a tool of critical social transformation and social inequities. While there are studies that address these issues of social justice in OEE, a PAR approach might

revolutionize OEE to a social justice *practice*, instead of a practice that addresses issues of social justice. To this end, this paper asks, for an outdoor experimental *engagement* in what ways can PAR be used as a strategy of resistance and liberation from “circuits and consequences of dispossession” (Fine & Ruglis, 2009).

Examples of PAR in OEE

PAR is a methodological approach that articulates a process for engaging in research, but that yields no predetermined method(s). PAR OEE projects are as wide-ranging and infinite as the skies themselves. The ideas for projects suggested are merely one, single water molecule in an otherwise vast ocean of possibilities. PAR projects could include having people from various disability groups collaborate to experientially document barriers to hiking, camping or canoeing and then using the research to propose actionable solutions for inclusive outdoor experiential engagement programs for persons who are, for example, blind, hard of hearing, in wheel chairs, or living with PTSD. PAR projects could also include researching / making queered OEE curriculum and outdoor education guides and maps. PAR projects may also engage indigenous communities for processes of returning land and learning with and about indigenous knowledges. PAR projects could also encompass a collaborative process between municipalities, community organizations, and people who are homeless and poor to develop sustainable, free, urban farming projects for those in need (whereby participating in such programs also improves well-being). PAR projects could also include reconciling what it means to do OEE in spaces, such as universities, that are on colonized lands. What outdoor education is necessary for all citizens?

Some further questions that a PAR ethos might be interested to ask of OEE are as follows:

1. What does a participatory history of OEE look like? Here it is interesting to consider the inherent militaristic history and its relationship in white European and North American contexts to other social constructs of “deviance,” and as

juvenile/prison reform movements. What does an entirely *disciplined* relationship to nature yield for one's emotional and spiritual relationship to it (and therefore, environmental)? About how it is even understood? How does OEE shift when approached from feminist / indigenous / global pedagogies? What does OEE offer that is not about "hard" / "soft" skills, or of the brutalizing forces of nature to "rehabilitate" deviance, but just being in nature alone. What are skills in indigenous and rural education that are necessary for survival and sustainability? Given the idea that a portion of OEE's history is as a mechanism of character reform, prisons and punishment—rather than a transformative place/space of justice, history and humanity, survival and peace, where sustainable and infinite skills, values and economies can be learned, taught and enjoyed—what might a liberation theology of OEE envision? What would OEE for liberation and freedom; traditional ways of healing, treating, curing, being and knowing do for community development? What does nature, as healing force, reveal for an OEE pedagogy? What would this curriculum be?

2. What does a queering of inclusive OEE look like? What does a critical analysis of "hard" versus "soft" skills and OEE histories of military, heterosexism and compulsory homophobia reveal for 21st century OEE programs, curricula and theories of change? What is the relationship between pan/non-gendered relationships to nature and gender constructions and identity? What is the relationship between indigenous gender/sex identities and indigenous environmental education? (What) do OEE spaces as places of sanctuary/safety//fear/violence look, feel like and require for LGBTQ youth (now and historically) What do such spaces of flourishing, safety and anti-violence entail? What would a contemporary, critical, social justice oriented language of OEE look like?
3. What does OEE as a recovery and healing look like? What does OEE as mental health or PTSD prevention and

intervention look like? What do they entail?

4. What does *joy* in OEE look like? *Why* is an inclusive OEE necessary, and why is it better than no OEE at all?
5. What does a critical race theory of OEE look like?
6. How can OEE engage meaningfully with decolonization and sovereignty for indigenous peoples? How might OEE engage with truth and reconciliation? What does an indigenous theory of OEE look like?
7. What does an OEE for human flourishing look like? What is a flourishing pedagogy of OEE?

Epilogue

I write as an outsider to the discipline of OEE, but as an interdisciplinary scholar between the fields of education, public health and human development. So too do I write as someone who grew up in the outdoors and spent a childhood living between cities and the rural outdoors. I grew up camping and going to camps in the woods. I grew up playing in natural spaces, hiking in them, and spending times in boats and canoes in them. I played, coached and taught in soccer, skiing and swimming in these spaces. Yet I also grew up in city and town public pools, parks and lakes. I swam, lifeguarded and taught swimming in urban spaces. I played and coached soccer in them. I played in alleys behind and islands in-between houses, in ravines that ran through the city, and at school playgrounds. Wherever I was geographically, much of my childhood was experienced outdoors.

My parents, both lifelong public educators and educational administrators, had separately participated in Outward Bound while public school employees—my father as a special education teacher and director, and my mother as a school guidance counselor. I have childhood memories of my parents leaving and returning from their respective trips, both in the 1980s—my father first, my mother a year or two later. The shirts they received—my father's navy shirt with white logo and my mother's yellow with a navy

logo—were coveted by my siblings and me for the rest of the time we lived at home. Now, nearly 30 years later, a picture of my father rappelling down the side of a mountain still hangs in the basement of our family home.

As an adult, I have found retreat in cities and in urban universities. I have spent my adult life living in them and thinking about the environment in different terms—in urban terms. Dispossession and displacement, gentrification and land/housing rights, urban farming, vacant land use/zoning, environmental discrimination, housing and neighborhood quality, working and living on stolen lands (from indigenous and black communities), public parks and spaces, social determinants of health and well-being, arts and culture as environment, outdoor science education, public transportation, human geographies, water access in/around cities, and the increasing paradox of the outdoors—once the definition of freedom and privacy, now ubiquitously surveilled and securitized. Public and police surveillance everywhere is pervasive for communities of colour, creating conditions of systematic and interpersonal violence that influences how and what public outdoor spaces black, brown and indigenous bodies can occupy. OEE cannot be separate from racialized realities of the “outdoors” when, for some, simply being outdoors may lead to being shot, searched or ticketed without cause.

I find myself also thinking that my love of cities is inextricably linked to my ability to leave them. I love cities because I have the material recourses, personal social privileges (race, class), and family wealth (house) to escape to the outdoors and feel like I belong there, because my whiteness is codified in them through colonization. In this way, flourishing still entails the outdoors, including, for me, unquestionably the water. How do we understand access and knowledge of the outdoors and natural resources as beyond even a human right? And how do we re-diversify, re-include all those groups now excluded from OEE, but whose existence, cultures and survival began and still reside there and/or whose land has been taken? Throughout North

America the original tenders of the land—black, indigenous and people of colour—have virtually no access to these spaces and lands of their ancestors anymore.? To move forward, we must return.

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Place-based Learning as a Catalyst for Change

By Constantinos Yanniris

The Tbilisi declaration, adopted in the context of the world's first intergovernmental conference on environmental education in 1977, describes environmental education as "inter-disciplinary and holistic in nature and application...an approach to education rather than a subject" (UNESCO, 1978). This is consistent with an understanding of environmental education as an approach that merges different subjects under the common purpose of sustainability. The introduction of sustainability as a social and educational objective offered additional impetus to the objective of holism (Tilbury, 1995). Subsequently, the Declaration of Thessaloniki (1997) summarized the hopes that sustainability would enable "a new and holistic approach to attaining environmental stewardship" (Knapp, 2000, p. 33). According to the report of the National Environmental Education Advisory Council (NEEAC, 1996) for the US Congress, "infusing environmental education into all subject areas can lead to overall improvements in the educational system, including improvements in teaching the core subjects" (p. 5).

Notwithstanding the appeal of holism among advocates of environmental education, progress has been slow to come (NAAEE, 1994). The integration of environmental education into the system of formal education has met with significant resistance, especially from the part of the curriculum that relates to the humanities (Brügger, 2004). The majority of teachers continue to apply a subject-based classification of activities and thus regard environmental education as part of the science curriculum (Simmons, 1989). A number of environmental education assessments have confirmed the difficulties experienced by those taking an interdisciplinary teaching approach (Lane, Wilke, Champeau, & Sivek, 1994; Smith-Sebasto & Smith, 1997; Yanniris, 2015). To a certain extent, these difficulties are

attributable to scientific reductionism and the science/humanities gap that afflicts our educational system (Snow, 1959).

Place-based Learning as a Pedagogical Method

Probably the shortest pedagogical path to interdisciplinarity is through the quotidian experience that students collect from their local environments. Awareness of students' immediate environments is the first step towards building an understanding of how local interventions combine to produce global effects. Place-based learning was embraced by environmental education as a method that seeks to re-connect participants with their particular corner of the world (Woodhouse & Knapp, 2000). Place-based learning follows an experiential approach, is grounded in the local environs and calls for the participation of local communities, all of which have been a central objective for progressive educators for more than a century (Dewey, 1958). In this respect, place-based learning can also be considered as the reiteration of Lewis Mumford's (1946) vision of a regional survey, a "method of study in which every aspect of the sciences and the arts is ecologically related from the bottom up, in which they connect directly and constantly in the student's experience of his region and his community" (pp. 151–152).

Within environmental education, place-based learning is expressed by the bioregionalist current (Sauvé, 2005). According to Peter Berg and Raymond Dasmond (in Traina, 1995), "bioregion" is a term that "refers both to geographic terrain and a terrain of consciousness—to a place and the ideas that have developed about how to live in that place" (p. 2). The knowledge of how to live (and how to live sustainably) in a particular place includes elements of local history, arts, culture, oral tradition and indigenous heritage. During the last decade, there has been

a growing understanding in the field of environmental education of the importance of cultural identity, local knowledge and place-specific skills (Pyle, 2008). International organizations have noted the efforts of environmental education to integrate history, culture, mythology and ancient spirituality into a holistic cosmology (CEDEFOP, 2012).

Figure 1: Place-based learning as a catalyst for transformative change

This scheme theorizes the relationship between the environmental and holistic educational paradigms and the educational components of interdisciplinarity, place-based learning and community participation. Place-based learning is understood to act as a binding locus for interdisciplinarity and local community participation in a process that catalyzes the transition towards holistic education (Yanniris, 2015).

Two Cases of Place-based Education

St. Clair (2003) has argued that a criterion of environmental education is to accept that “the process of education is as important as the content” (p. 71). Especially in the case of environmental education, it is the process that defines its character. Without its outdoor practice, environmental education could soon lose its distinct presence (McLarnon, 2013). Back in 1995, Daniela Tilbury identified education in the environment as an essential constituent of environmental education. Hence, place-based learning is consistent with the conceptual origins of environmental education and constitutes a key element in its practice. Recent research has shown that place-based learning is effective as an interdisciplinary method (Stern, Powell and Hill, 2013). However, interdisciplinarity does not necessarily lead to holism. The following cases are exemplary of the subtle yet substantial difference between interdisciplinarity and holism.

During the winter of 2011–2012, I participated in the development and

implementation of an educational program by the Environmental Education Center of Krestena, Greece on the effects of damming. The program included a visit to a local hydro dam and its environs where the students were guided to observe the apparent and implicit consequences of damming on the natural environment. Through this process the students realized that a hydro dam is an intervention with complex, interconnected and ambivalent consequences. A hydro dam disrupts the local ecosystem but also generates electricity and thus saves fossil fuels and reduces global carbon emissions. Dams can cause the displacement of local populations, loss of cultural heritage and soil erosion, yet they also create reservoirs of freshwater necessary for irrigation and urban use. At the closing of the educational program, students were asked to debate and reach an informed decision on a hypothetical proposal for the construction of a similar dam in their area of origin.¹

This scenario represents a place-based program where the environmental educator goes over various aspects of geography, geology, physics, chemistry, ecology, economics, engineering, geonics and planning in order to explain the broader effects of a particular environmental intervention. During the implementation of the program, the environmental educator crosses the barriers between disciplines so often that s/he eventually ceases to notice. This program is a valid transdisciplinary, place-based approach to environmental education, yet lacks a key component that would help move it towards a holistic approach: the representation and participation of the local community, which would include the element of local diversity.

As an example of an environmental education program that capitalizes on the cultural identity of its local community, I cite the pedagogical model developed by Elsa Talero and Gloria Humaña de Gauthier (1993) in Colombia. In this model, the school becomes the centre of the community’s social and environmental

development. Education is based on a participatory approach: it calls on parents and other members of the community to identify the problems of their locality and its development needs. A conception and implementation phase follows, which sets in motion projects to resolve these problems from an ecological and active community development perspective, including economic aspects, for example by producing and processing pesticide-free fruits by using domestic compost as fertilizer.

The Colombian example combines the elements of transdisciplinarity, place-based learning, and the active involvement of the local communities. As a matter of principle, it meets all the requirements of a holistic environmental education program. The presented cases demonstrate that place-based learning is a necessary but not sufficient condition for the achievement of holistic educational practice. This is consistent with a theoretical analysis that suggests an integrated, holistic environmental education program requires three components: place-based learning, trans-disciplinary practice, and the active participation of the local community. In the following part, I will seek to define the conceptual relationship between these components and justify their choice as central constituents for the theory of environmental education.

Discussion

This paper negotiates the relationship between two pedagogical conceptions that have informed the contemporary practice of environmental education: place-based learning and holistic education. The origins of place-based learning and holistic education can be traced back to the work of Lewis Mumford (1946) and John Dewey (1958) on the regional survey and experiential learning, respectively. Between the two approaches, a fundamental distinction emerges: while place-based learning is a pedagogical method, holism is an educational paradigm that aims to reconnect the scattered fragments of

human knowledge. The following text seeks to define the axiological relationship between the two and justify their choice as central constituents in the process of environmental education.

Mumford (1946) has explicitly connected locally based learning with interdisciplinary practice in his foresight for a regional survey, a “method of study in which every aspect of the sciences and the arts is ecologically related from the bottom up, in which they connect directly and constantly in the student’s experience of his region and his community” (p. 151–152). For Mumford, the local community is the basis of interdisciplinary learning. According to Orr, environmental education would “give greater emphasis to place-specific knowledge and skills useful in meeting individual local needs, and for rebuilding local communities.” (Orr 1992, p. 146). Indeed, in 2013 Stern, Powell & Hill identified place-based learning as one of the most popular practices in environmental education.

From the first steps of institutionalized environmental education, it was envisioned that it should proceed towards a holistic direction. To that end, environmental education was expected to “examine the ecological, social, cultural and other aspects of particular problems. It is therefore inherently interdisciplinary. However, the problems it addresses should be familiar to the learners in their own home, community and nation” (UNESCO, 1978, p. 12). From these definitions we can deduce that the instruments we use today in environmental education, most notably interdisciplinary methods and the encouragement of the participation of local communities, were already conceived back in 1977.

Today, place-based learning is gaining momentum as a method for environmental education programs. Place-based learning can be viewed as the catalyst that enables the integration of interdisciplinarity and the participation of the local communities to environmental

education programs (see Figure 1). As the theorists have foreshadowed, any of these components alone is not sufficient to achieve transformative change in the direction of holistic education. A synergy of all components is required. This is consistent with the experiences of outdoor educators, who report that the participation of local communities and an interdisciplinary approach is essential to achieve transformative change on a pedagogical level (Talero & Gauthier, 1993).

Conclusion

Place-based learning has been associated with multiple benefits for participating students (Stern, Powell & Hill, 2013). However, the pedagogical method of place-based learning per se is not a sufficient condition for transformative change. Indications from the implementation of place-based environmental education suggest that the programs that resulted in transformative change included both, a) an interdisciplinary working approach and, b) the active participation of local communities. Thus, a case can be made that to achieve transformative change, the pedagogical method of place-based learning has to be part of an interdisciplinary approach that requires the participation of the local community. Under these conditions, place-based learning can demonstrate interdisciplinarity in situ and mobilize place-specific knowledge and resources administered by the local communities. With that respect, place-based learning continues to bear the promise of transforming the current educational paradigm towards the end state of holistic education.

Notes

¹ This environmental education program is, I believe, a sign that environmental education has now proceeded beyond its adolescence of environmental activism towards a more meaningful role, which is to forge environmentally aware citizens who can understand the multilevel

impact of their actions. Contemporary environmental education teaches the complexity of environmental issues by exposing the conflict between our short- and long-term interests.

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Outdoor Mathematics Education: Using Outdoor Environments to Deepen Students' Understanding of Mathematical Concepts

By Saba Din

Over the past 20 years, reform efforts have urged that traditional methods of teaching mathematics, which focus on memorization of procedures and rote learning, be replaced with equitable practices that enable all students to learn through problem-solving, mathematical reasoning, and communication (National Council of Teachers of Mathematics, 1991; 2000; Ontario Ministry of Education, 2004; 2006). What used to be the typical math class (teacher-centred and lecture-based) is now becoming student-centred and inquiry-based. Many resources and professional development opportunities provide math teachers with support in adopting reform practices, such as incorporating math manipulatives to foster conceptual understanding, planning high-cognitive demand tasks that allow for a variety of strategies and/or solutions and engaging students in math discussions or "math talks," both in small groups and whole-class settings. What is less highlighted is the role that outdoor education can take in line with reform efforts to improve mathematics achievement and develop students' mathematical literacy. The aim of this article is to share insights on why outdoor mathematics education is important and to provide educators with some initial ways to consider teaching math concepts in outdoor environments.

Why Outdoor Math Education?

The Organization for Economic Cooperation and Development (2013) has defined mathematical literacy as follows:

An individual's capacity to formulate, employ and interpret mathematics in a variety of contexts. It includes reasoning mathematically and using mathematical concepts, procedures, facts, and tools to describe, explain, and predict phenomena. It assists individuals to recognize the role

that mathematics plays in the world and to make the well-founded judgments and decisions needed by constructive, engaged and reflective citizens. (p.17)

To develop mathematically literate citizens, students require experiences that help them understand and relate to math concepts in various contexts. Many students do not see how math learned in school is relevant to their own lives. Researchers have found that outdoor instruction helps to improve content relevance for students, in addition to increasing student interest, attention and even academic achievement (Bouillion & Gomez, 2001; Crain, 2005; Pittman, 2011; Watson, Miller, & Buckler, 2012). By using outdoor settings to teach math concepts, teachers can help students begin to recognize the role that math plays, not only in their own lives, but also in nature. Using outdoor math instruction in the early grades is critical because young students can begin developing awareness that math is all around them, making mathematical connections to real-life settings and building an appreciation for the role math plays in their world. This may also help to ease, and perhaps eliminate, students' anxieties towards math because outdoor math education can dispel the misconception that math is only about numbers, procedures, and solving irrelevant problems.

Practical Ideas for Outdoor Math Instruction

Math and outdoor education can be integrated in a multitude of ways, with some activities providing a richer outdoor math learning experience than others. Educators new to outdoor math instruction can incorporate outdoor environments to teach concepts that are easily relatable to natural settings, an area that fosters deep connections for students. A move towards

this direction might begin by taking hands-on indoor activities to the outdoors, using the concrete materials found outside as a substitution for the math manipulatives (e.g., pebbles or sticks to replace counters).

For the younger grades, teachers might take students outside for “math walks” where they can engage in a variety of tasks using natural settings to

- collect and count a variety of objects to represent different quantities in order to develop students’ number sense;
- gather objects of natural groupings, such as flowers with five petals or three-lobed leaves, to work on skip counting and counting by groups;
- estimate lengths of both natural objects (branches) and structures (playground poles) to begin developing understanding of measurement and estimation of lengths; or
- identify and define various two-dimensional shapes, either natural or man-made, seen around the community to recognize the relevance of geometry in their world.

The examples listed above can be extended for older elementary students. Teachers might ask them to

- represent fractions using natural objects, such as finding sticks to represent a whole, half, quarter, etcetera, to recognize another context for fractions;
- mark various lengths in the playground to demonstrate fractions (e.g., marking where the half-point, quarter-point, etcetera, would be for a particular distance);
- gather objects of natural groupings, similar to the task for younger students, to recognize multiplication as repeated addition and counting of groups;
- estimate area and perimeter of natural spaces, and build the appropriate tools (e.g., a metre-squared tile) to physically measure areas and perimeters to deepen their conceptual understanding; or

- identify and define various angles, symmetrical objects or three-dimensional shapes, either natural or man-made, seen around the community to recognize the relevance of geometry in their world.

The above examples demonstrate ways different concepts might be taught using outdoor instruction. Although the brief tasks can be done in any setting, these examples provide teachers with a starting place for outdoor math instruction.

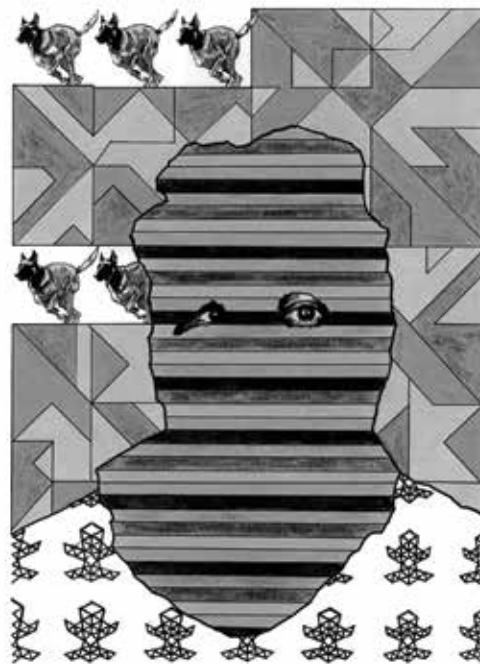
The discussions facilitated by the teacher during these activities would be aimed at supporting not only students’ mathematical understanding of concepts but also their perceptions of the role math plays in the world around them.

Richer outdoor math activities that emphasize the relevance of mathematics in the world, specifically outdoor environments, require extensive planning and more instructional time. Through the collection of these outdoor activities as a math unit, students are engaged in using outdoor spaces to make sense of, further develop, and apply math concepts throughout the unit. Building a school community garden is one of many examples of a math unit integrating the outdoors. The collection of activities for this project involves various mathematical concepts throughout the planning and building phases. From planning the garden, students experience concepts of measurement, area and perimeter, fractions for designing the interior of the garden, and budgeting, amongst others. Students would also be applying the concept of scale when drawing representations of the garden plan. While building the garden, students not only experience hands-on applications of the mathematics, but also recognize the role that math plays in design. Engaging students in an outdoor math unit such as this one requires careful planning: the students should experience challenges that will require aspects of math for solving while still maintaining the cognitive demand on their learning. Keeping this at the forefront

when planning an outdoor math unit is important in order to foster mathematical literacy and enable students to see the relevance of math in their world.

Lehrer and Pritchard (2002) describe a rich outdoor math unit comprised of ten lessons, using geometry as a tool for modeling to symbolize an outdoor space. Their goals were to deepen students' understandings of mathematical position and direction by asking third-graders to create a map of their school playground. What started off as drawings of the playground, usually with students' favourite playground equipment piece drawn in the middle, transitioned into mathematically appropriate, top-view maps representing the playground (Lehrer & Pritchard, 2002). Through ongoing discussions and explorations of the playground and their representations, students came across challenges where they relied on mathematical concepts as a solution. These mathematical solutions involved students measuring lengths and angles in the playground, developing conceptions of scale to represent playground landmarks on their map, and understanding and applying the use of coordinates with an origin in order to describe position and direction. By progressively solving mathematically productive problems, students were consistently revising their maps and applying new math concepts with each revision in order to represent their outside world on paper more accurately (Lehrer & Pritchard, 2002). The students reflected on the series of maps that they created, and their progress in thinking was evident with each revision. To extend this project, students were asked to create a map of an outdoor space in their community with their parents, and the authors noticed that many of the maps showed evidence of the forms of thinking and practices learned in the outdoor math unit. Parents were pleased with the knowledge that their children displayed while creating a map of their community space, and one parent sent feedback to the educators stating "What an experience!" (Lehrer & Pritchard,

2002, p. 79). At the end of the year, students had written paper-pencil tests involving the concepts learned during the outdoor math unit, and the authors found that students had "achieved long-term retention of many of the lessons learned during the unit on mapping" (Lehrer & Pritchard, 2002, p. 80).



To extend outdoor math education further, teachers can also integrate environmental issues within their teaching; for example, teachers can design an outdoor math unit that focuses on data management and issues of pollution. The activities would involve students gathering sets of data related to causes of pollution. One such activity may involve students surveying the number of cars and busses travelling at a particular hour in a marked area in their community over a period of time. Once all of the data sets are collected, students can represent their findings using various graphs. Students can discuss issues of pollution related to their findings and brainstorm ideas for a campaign to raise awareness of pollution issues, using their own statistics. Data management concepts are being reinforced throughout this unit, but more importantly, students are

developing their critical thinking skills as they make sense of the results in relation to their lives and consider solutions for this environmental problem.

Closing

Outdoor mathematics education can play a critical role in not only supporting reform math efforts and shifts away from traditional math instruction but also fostering the development of mathematical literacy within students. This article offers teachers some ideas on how to begin integrating outdoor instruction with math education. There are numerous online teacher resources that promote outdoor math education, many published in the United Kingdom and a few in North America. Although there are many Canadian teachers regularly integrating outdoor education with science instruction, and some who might also integrate outdoor education with math instruction, there is a need for more professional development opportunities that emphasize how to implement outdoor math education to support student learning and improve student achievement.

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School, Nature and Educational Wounds: Parents' Stories

By Yi Chien Jade Ho and Stefanie Block

*Nature was truly a sanctuary, a place of refuge,
a place for healing wounds.*
—bell hooks, *Belonging: A Culture of Place*,
2009

Contemporary schools are heavily influenced by neoliberal rationalism, a system that violently maintains one's alienation from place, self and others (Tuck, 2013; Derby, Piersol & Blenkinsop, 2015). In 2011, the Maple Ridge Environmental School (MRES)¹ was initiated with the intention, in part, to foster cultural change within the public school system that is rooted in relationship with/to place, the natural world and the community (Blenkinsop, 2013). The school's community has been built with a core group of parents committed both to their children's learning and the development of the school. The parents are often explicit about their desire to give their children a different school experience, a desire fuelled largely by their children's negative prior schooling experiences or by the parents' own educational histories and beliefs.

A research team from Simon Fraser University (SFU) has been with the project since its inception. Now, four years later, seeking "signs" of cultural change, we interviewed parents who have been with the school since the beginning. We conducted 16 semi-structured parent interviews, exploring five areas: journey with the school; curriculum and learning; place and the natural world; community; and research impact. Although the majority of questions probed student experience, we received unexpected stories of transformation and healing from parents. It is on this ground our exploration begins. These transformations can be described as a shift from an instrumental view of education to seeing the empowering potential of education, or the healing of "educational wounds" from personal

schooling experiences. This led us to the question, "What is happening at the MRES that provides space for the shifting of perspectives, not just for students, but for parents?" In this paper, we focus on the stories of two parents—Raven and Crow. Their stories represent both the healing of the inner space, and a transformation reaching outward into the community.

From both parents, we heard a strong theme of belonging manifested in a community built on caring relationships, shared purposes and attending to the places in which they are situated. We will first explore the meaning of belonging in this particular community. Furthermore, we want to open a discussion on the potentiality of the more-than-human world in affording the possibility of cultivating deep connections and transformations.

Parents' Stories: Raven²

Raven is a mother of two. As her children went through their schooling, she had a chance to reflect upon her own experiences. Raven didn't have a good educational experience; she never felt a sense of belonging. She was an outdoor child forced to learn in a box. Her schooling told her that there was a set way of being; that there were prescribed rules that she must abide by if she was to be successful. If she didn't follow the "prescribed paths," she would not be as good as everyone else. Despite the pressure to conform, Raven didn't follow the prescribed paths. As a result, she felt that she didn't have as much value as others, especially those who went to university.

When Raven first came to the MRES, she wanted to be involved but didn't know where to start. Gradually, through more interaction with the community, Raven became increasingly involved. She began to feel a sense of ownership in the school, that she too was a holder of knowledge. As

nature is constantly in the foreground of the school, Raven also found a strengthened connection with the natural world. She describes her journey with the school as one that healed her educational wounds and changed her way of being.

Parents' Stories: Crow²

Crow is a trained Early Childhood Educator and has been living in Maple Ridge for 25 years. When she heard about the MRES, she and her husband decided it was exactly what their daughter needed. When attending conventional school, her daughter would often come home crying due to bullying. She was diagnosed with ADHD and anxiety at age 8. Crow tells the stories of how teachers attempted to support her daughter's learning, but did not have the resources to attend to her needs. During her daughter's participation in the MRES, Crow became an active member of the community and developed a deeper connection to her own pedagogy of place, emergent learning and child-led education.

Believing that this sort of education is beneficial to all children, not just her own, Crow opened an environmental childcare centre for preschoolers, with a focus on time outside and child-led play. Beyond the centre, Crow has become an active member of the greater Maple Ridge community: going to the Salmon Festival, participating in the community seed centre and actively involving herself in local environmental/political issues. She describes her experience at the school as a "tuning in," a surprisingly spiritual deepening.

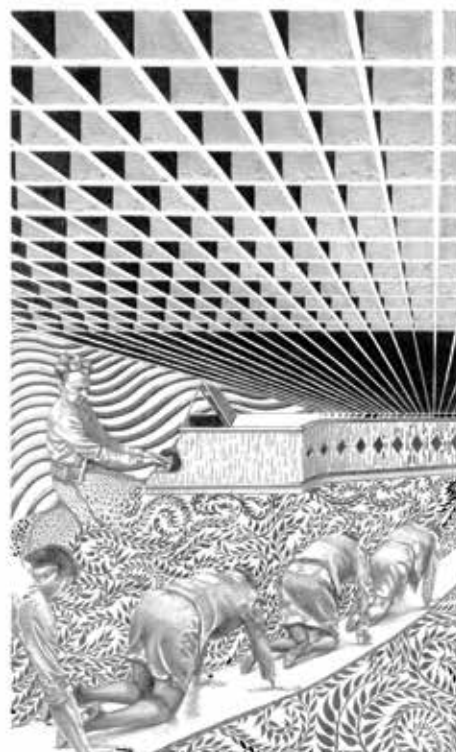
Sense of Belonging: Belonging to Purpose, People and Place

The stories of Crow and Raven speak to the emergence of a transformative community space. This space is co-constructed through the enactment of values and structural consequences of the unconventional setting of the school. We understand the term "community" here to be a grouping of humans and the more-than-human, co-constructed in the triangulated relationship

of belonging to place, people and purpose.³ The space created by the MRES within the public school system confirms the validity of an unconventional way of teaching, learning and knowing that resonates in a relational way with parents. As a result, a cultural ecology developed through common practices and daily routines of learning and being at the school. The structures of the school provide an opportunity to engage in and practice alternative responses to the world, particularly to one's relationship with place and education.

Sense of Belonging to Purpose

From our interviews, we hear varying degrees of association with the mission and values of the school and what becomes evident is the feeling of connection to a greater purpose. For parents, the MRES is perceived as a radical alternative within its district and parents often discuss moments where they are called to stand as representatives of the school in their broader communities. Most parents are motivated to advocate based on their appreciation of their children's experience, while for some, motivation comes from the belief that this sort of schooling should be made available to a larger population. Crow and Raven were asked if this school is for everyone. They responded similarly: the MRES is a necessary and needed change in the ways schools operate, and every child could benefit from this kind of education (Crow & Raven, First Interview, 2015).



Through her involvement with the MRES community, Raven expresses her realization that academic achievement is not the only important thing in life, but that life teaches us 24/7. Raven shifts her view of who is responsible for the act of teaching. “We are all teachers and it’s all impacting our kids. We are all responsible for the entire world” (Raven, First Interview, 2015).

Crow expresses a similar idea:

Because of [the experience at MRES], I knew I had to do something for little kids.... We are forcing little kids to sit down and do a worksheet, so I took a step back and we opened [a preschool], which is an environmental childcare centre and it’s the first one here.... People are really starting to see this way of learning that is just amazing, and it happens in the outdoors because there is space to be free! It’s called freedom! (Crow, First Interview, 2015)

In hearing Crow’s excitement and passion, we heard the explicit shift from personal knowing into community action. What the space of the MRES created for both Raven and Crow was the recognition and proof that learning emerging in the more-than-human world had powerful ways of connecting students to themselves and the world around them. This challenged their past stories of schooling as a painful process of alienation to one where learning is engaged, inspired and constant.

Sense of Belonging to a Place

The school is located in the Maple Ridge catchment, which inevitably means that all families attending the school live on the land designated as “Maple Ridge.” For both Crow and Raven, long-term residents of Maple Ridge, being a part of the MRES has deepened their relationship with the land they call home. Offering practices to parents through learning days and “Hearth Keeper” meetings⁴, where they go for walks on the land, encourages parents to slow down. This pausing of the everyday bustle brings space for awareness of and attention to the places where they live.

Being able to breathe. I think that is a huge one. Just being able to breathe. They never have time, always rushing. Even with little kids, they rush, rush, rush. It’s so important....Actually [the principal] is good about this; he says to take deeper breaths.... When we had researchers come and do the learning days with us, we would go out into the forest...and decompress, and I had never done that, right? Never really think about stuff like that—I do now! [My daughter] used to love those times too. Actually, once we started at the school, we went for more family walks. (Crow, First Interview, 2015)

As the children’s relationship with the school’s sites becomes stronger, they influence the parents by asking to be outside more often. Crow and Raven, along with other parents, speak to an increase in time spent outside with their families because their children are requesting it. Many parents speak to getting to know new areas because their kids want to show them a tree they found, a fort they built or the salmon spawning in the river. The ways the students explore the land draws and drags parents into exploring these places, reacquainting them with the surrounding ecology and its playful wonders. After a year or two, a feeling of familiarity with the land emerges, as parents become more attentive to the changing of the place over time. The journey for parents, even in the act of dropping off and picking up their children, brings them to a deeper knowing and relationship.

For Raven’s family, it led to larger life decisions. They ended up moving to a place where encounters with animals and the seasons is more accessible. Raven also became a daily hiker, often barefoot. Crow recounted a meaningful experience wherein her daughter took her to a waterfall to cheer her up on a bad day. Being out on the land has culminated in what Crow calls “being in tune” with herself (Crow, First Interview, 2015) and what Raven identifies as reaching a sense of wholeness in her being (Raven, First Interview, 2015). When, as researchers, we step back and look at how knowing and being connected to the land challenges discourses of alienation and modern

linear thinking, we see the unfolding of a community that feels a sense of belonging to the places it inhabits and the potential this creates for healing. This healing comes from a feeling of being able to “just be” (Crow, First Interview, 2015) and the felt space that is held for presence and awareness.

Sense of Belonging to People

A clear element in the MRES community is care in the sense of a capacity for people to respond to one another’s needs and offer support to the best of their ability (Noddings, 2002). The parents experience a sense of belonging through a kind of familial caring relationship with each other. The kind of caring practiced at the school responds to individual’s needs and is explicitly relational. It is a caring characterized by what Nel Noddings (2002) calls “receptive attention” (p. 17). Receptive attention, for Noddings, is the ability for one to tend to another and, through such tending, to allow what is being experienced by the other to affect that care. Receptive attention is central to the caring encounter. This attention can be risky while also transformative; it requires one to open themselves and be available to the needs of another. To care is an act of vulnerability—through our care for another, we open ourselves to the possibility that we might be transformed by the encounter (Noddings, 2002).

Stories shared by the parents illuminate impactful relationships of care within the school community. When parents hear about a moment of care with their child, it reinforces the sense of support in the school environment. Trusting other parents and teachers to truly respond to their children’s needs encourages the development of community. Often in interviews, parents speak about the school as a big family. While the term “family” connotes many meanings, in the context of these conversations it more often describes the feeling of trusting one another, feeling known and welcomed. Crow relates, “I don’t think it is just the outdoors—it’s [also] the love and the caring and the fact that we’re a community. And we look after each other, we’re a family.... Meeting

like-minded people, I believe that we share something.” (Crow, First Interview, 2015). Noddings (2002) suggests that responsive caring in education creates potential for the student to develop their trust in the world, which allows them to meet and know the world as it meets them. What we have seen at the MRES is the potentiality for care to manifest itself in the web of interrelated partnerships, impacting parents’ personal ability to meet the world of education.

Modeling a responsive caring environment at the school blooms into a larger conversation about caring for the environment itself. One theme reflected deeply through the students’ continuous engagement with nature is interconnectedness. Through living with others in a close community, there is potential for a new moral paradigm, one that shifts focus from the self to the interconnected *natural whole*. As this shift occurs we can begin to expand our care to the more-than-human world. This caring, as Heesoon Bai (1999) explains, is based on the grounds of awareness of our interconnectivity, realized when we recognize the other as an extension of our “beingness,” a continuous flow of relationality to us. When Raven is out in the school community and the natural world, she is constantly reminded to be slow and quiet; through the stillness she notices “how everything is connected” (Raven, First Interview, 2015).

Simultaneously rather than causally, care for the land extends from the care practiced in this community, the teaching of interconnectedness and co-existing with the natural world. Environmental educator David Jardine (1998) describes this as “relations of mutuality” (p. 120). The place, the land and the more-than human become “not an object displayed according to forms of human understanding, but a home that embraces” (p. 120). In alignment with the sense of belonging cultivated through the school’s human community, a loving response to the environment, the land and the places in which the school is located is echoed in the stories of the parents.

Foregrounding the More-than-human World

In understanding how these elements of belonging to place, purpose and people have emerged at the MRES and created a container of community for healing, it is our deeper inquiry to wonder how the more-than-human world influenced and enabled these transformations. To do so, we bring the more-than-human world into the foreground and honour its agency. We recognize that we are in relation with the more-than-human world and co-creating what we call an *inter-arising reality*, one that is emerging moment by moment and challenging the modern, rational and anthropocentric divide between human and more-than-human (Bai, 2015; Haraway, 1992; 2008). In our inter-arising reality, the more-than-human world becomes more than a quaint setting in which learning can occur, but takes an active role as teacher, guide and community member from which we have much to learn (Blenkinsop, 2012; Blenkinsop & Beeman, 2010; Jardine, 1998; Piersol, 2014). The consequence of this is that we cannot erase the resonance of the places where the school is located. Nor can we ignore the impact of place on how we construct and shape our reality (Basso, 1996; Gruenewald, 2003).

The school encourages an important shift from playground to forest, from inside to outside. Its very structure not only overtly confronts and defies the nature/culture divide, but also constantly invites parents to be present with the more-than-human world. Hearing their stories, it is evident that their process of healing has included developing a sense of being with and feeling a part of this natural whole.

We argue that in and amongst the daily curriculum and community happenings at the school, the structural shift that locates the school in a more-than-human space presents an opportunity for the more-than-human world to be an active co-agent in holding the possibility for a powerful community to form and for individual transformation and healing to happen. As a research team, we listen for how the teachings of the

more-than-human world are revealed in the stories, wondering at what meeting has happened between Crow and Raven and the more-than-human world for them to shift their notions of self-worth, ability and resilience to life.

Notes

¹ The school was conceived and developed in collaboration with Simon Fraser University (SFU), the school district, and the municipality of Maple Ridge. Uniquely, the school has no building. Learning takes place outside in various locations, primarily local forest parks.

² The stories of Raven and Crow are drafted by them and edited with their permission.

³ We draw on German sociologist Ferdinand Tönnies's concept *Gemeinschaft* to interpret how the parents experience the community of the school. For Tönnies, *Gemeinschaft* can be looked at from "three dimensions, or stages," namely "Gemeinschaft of locality," "Gemeinschaft of mind" and "kinship *gemeinschaft*" (Fettes, 2000, p. 217). Fettes (2000) reconstructs these terms into "ways of being together," "ways of being in the world" and a "collective negotiation of mental life" (p. 218). Through our interview with the parents, we can see that the community of MRES has developed in these three dimensions through a shared sense of belonging.

⁴ Hearth Keeper Meetings are bi-weekly parent and administrator meetings.

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We want to thank Raven and Crow for generously sharing their stories with us. Thank you for challenging and inspiring us as we think deeper into our relationship with the world.

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Stefanie Block is an experienced outdoor educator who recently earned her master degree in *Contemplative Inquiry and Approaches in Education* at Simon Fraser University. In her work with youth in the natural world, Stefanie aims to challenge the dominant voices that distant us from our surrounding worlds. Her work and research intertwine together as she explores the ethics of being an educator with the natural world and effective practices for implementation.

Student Reflection from a Four-Credit Integrated Program: I Sense...I Belong

By Joel Barr and Alex Walmsley

During each semester of the Community Environmental Leadership Program (CELP) I ask my students to find a secluded spot no more than 15 minutes' walk from their home. They are to visit this location for an hour on at least six occasions and, in some very broad way, write on nature. It is designed to show people how they can connect with a place and how their writings change when they are in a different place, and it has been a great success. This concept has become the backbone to my program in its new urban setting, both for both my Grade 10s and for the Grade 5 environmental science program that they teach: nature is all around us and it needs to be protected where we live. In Grade 5 terms, you can't pee in one part of the pool and expect the pollution not to spread.

Here is one of the best pieces of writing to emerge from this exercise. I am convinced that one cannot fake the sincerity found in such a reflection. It seems that students somehow "get" what we do around here. They just need a time and place to think about themselves and to reflect and connect with the natural world.

I watched something interesting the other day on planetary movement.

A video was explaining the complex movements that Earth takes as it travels through space, and how any place you are now, you will never be able to return to, even if you travel back to those exact coordinates on Earth's surface. The Earth has moved, rotating and travelling at hundreds of thousands of miles per hour through space-time, around a sun moving yet faster, in turn travelling around a galaxy moving faster still.



So it is interesting how much weight we humans put on the places we love. We love places, we fight for places, we die for places. And to be honest, I think there's something to be said for that, because I feel it too, just as much as any other person on Earth. We become imprinted on our surroundings as we travel and interact among them, and in turn they become imprinted on us. There are places I love as family. And my magic spot is one of them.

It is strange, how I found it; skiing along a familiar trail, I stumbled into the unfamiliar. I saw a hill, one that would become invisible with the growth of spring leaves, standing a few dozen metres off the trail. I thought that this might be as good a place to look as any, so I removed my skis, and walked through the undergrowth around the back of it. What I found there may not have looked special to anyone else, but I saw something in it: some glimmer of things to come, in the little cliff of limestone concealing my chair from the trail and the tiny clearing that lay before it, still clad in a fluffy carpet of snow.

I came back to this spot a couple of weeks later, on my bicycle, after my mind had been shifted by our class winter trip and the snows by the creeping heat of spring. The ground was wet and slushy beneath me as I rode down the trail, and I began to regret my decision to return so early.

But I was wrong. The spot remained unchanged, save for the evolving seasons, and it remains so to this moment. It took time, this spot, to become special. Each little wonder that I notice here, from the downy woodpeckers on the trees in the early spring, to the calls of hawks on the wind, to the trio of young raccoons that visited me one day from their loft in the canopy, etches the meaning of this place a little more deeply on my brain. Its meaning grows as I continue to spend more time and to write from here.

It is sacred to me, this place. It is my refuge from the sands of time, and the endless hum of human activity in this world. I can slip away there, for hours at a time, and let my mind and my pencil wander. My parents don't understand it; they feel I should do

my homework in my room, and not bother to cycle out into the middle of nowhere to sit in the woods alone. I think it irritates them that I cannot do housework when I'm absent, although I might not be too torn up about that one. But it is a different feeling when I am there. I experience things differently, on a... higher plane.

My mind wanders to places I otherwise wouldn't, and conjures up ideas that would have remained otherwise locked away. It is my place for calm, relaxation and refilling the void of unhappiness that sometimes gapes in my life. But the one major and all-encompassing thread to my magic spot is my sense of belonging.

Some humans live out entire lives on a pad of concrete, so disassociated with the land whence they came that they feel obligated to use the Earth as a pantry, a toilet and a dump all at once. We live in a different way from the chipmunk that scurries around the forest, but are 95% genetically identical to it.

We are no different than these things that we see in the woods. We don't have anything special about us, no unique spark that sets us apart. We are of nature, part of nature, and destined to be reunited with nature when our time here is over. So, for me, I do belong out there in the woods, with my back against that cliff and my eyes and ears open wide, taking in all that I can, because it is really taking in a part of myself. I sense that this place means something. I sense...I belong here.

Joel Barr has been involved in CELP (The Community Environmental Leadership Program) in Guelph since 1996, and stepped in full time in 2010 with the passing of Mike Elrick. He loves working with and learning from the leaders of tomorrow, and of course, taking long walks in the woods.

Alex Walmsley is now in Grade 11. He is happily engaged in yet another four-credit integrated program known as "DaVinci." Thanks to Grant Linney for facilitating and editing these pieces.

OWLS: Supporting the Professional Development of Emerging Wilderness Trip Leaders Through a Community of Practice Approach

By Kyle Clarke

For me, this project began a little over three years ago while in attendance at the Council of Outdoor Educators of Ontario (COEO) annual fall conference. During lunch I sat down to eat with a group of five people—three women and two men—all of whom appeared to be in their mid-to-late twenties. They were actively discussing their various work experiences as wilderness trip leaders. As I also had experience in that role, I sat, ate and listened with more than a little curiosity. Their discussion initially focused on the various camps, companies and employers they had worked for and the advantages and drawbacks associated with each. They talked about rates of pay, interactions with co-workers, and certification or training opportunities the organizations had provided them. From there on, however, the conversation quickly transformed and became more serious in tone.

They began to share insights and reflections about the difficulties they had experienced as new trip leaders. These were quite personal in nature and included accounts from their first few seasons leading trips—each highlighted feelings of inadequacy, anxiety and lack of support or guidance they had experienced during this time. With each successive confession, I grew more surprised at what I was hearing, and could see a sort of agreement starting to build amongst my lunch-mates. Then the discussion simply ended with a passive consensus: this was just the way it was—becoming a wilderness trip leader always involved a period of trial by fire and apparently it was commonplace to feel unready, lack support and experience significant fear when taking on the responsibility of leading others in the outdoors during the first few seasons.

After listening to this discussion I sat in complete disbelief. Given these five individuals had worked for different employers, it seemed improbable that they could all share such similar negative experiences as beginning leaders. With certification requirements and standards of care as stringent as they are today, how could organizations not recognize the necessity of supporting new leaders using a thorough induction process and providing ongoing apprenticeship? Where was the support and guidance these five people claimed was missing?

Compared to that of my younger lunchtime companions, my own experience as a new trip leader was the polar opposite of what I had heard discussed. This is probably why I was so shocked and taken aback at the time, and why I have continued to carry these concerns forward with me to today. As a beginning outdoor trip leader or apprentice guide, I was provided with almost constant support from a collection of experienced mentors. Looking back, I was extremely fortunate to have had the opportunities I did, and to have been mentored in such a thoughtful and comprehensive manner. However, I don't believe I was an exception. At that time (the early 2000s), I know that my peers, who were working for other employers, were afforded similar training experiences and also had access to qualified mentors in the field. We regularly participated in preseason "mini guides' camps" and recertification courses that were organized collectively by our employers and respective organizations; we also benefitted from the cross-pollination of leaders who worked on a contract basis with multiple companies throughout a season and who shared their knowledge with us as they passed through. I feel these activities and this approach to staff training contributed



not only to my professional development and confidence, but also fostered social networks and a real sense of community amongst peers in this field. So how was it possible that this rich and beneficial learning experience, from a mere ten years earlier, could be so different from that of the leaders I was sharing a table with now?

During the months that followed this encounter I purposely initiated conversations with people actively working as trip leaders to share what I had overheard at the conference. I believe I was seeking reassurance that what I had heard was atypical, a set of isolated cases. Yet what I learned from my investigation was, in fact, quite mixed. While several organizations did have programs in place to mentor staff and support their development as wilderness trip leaders, many others did not. In these latter instances, much of the onus for professional development had been placed on the individual leader or guide; organizations were predominantly hiring staff who already possessed the prerequisite certifications and apprenticeship-type relationships, even in the informal sense, did not exist. Effectively, many of these organizations appeared to be either uninterested in supporting the professional development of their staff (due to associated costs, resources, time or perceived return on investment) or somehow unaware of the benefits of doing so. And so, I ask: based on this apparent predicament, how can the state of professional development and social support for beginning wilderness trip leaders in Ontario be improved? This article will consider this scenario and explore one approach that was implemented to support the learning and development of new professionals in this field.

The theory of *situated learning* will be utilized within this discussion as a framework by which to locate, examine and understand the unique learning contexts of wilderness trip leaders. Through this approach, I hope to reveal how the social interactions fostered within this specific work context connect and contribute to cognition, knowledge and learning. Specifically, by applying this theory, I am attempting to demonstrate its effectiveness in contributing to the professional development of trip leaders. I will begin by introducing situated learning theory, as well as the related concepts

of *community of practice* and *legitimate peripheral participation*. I will then describe the Ontario Wilderness Leadership Symposium (OWLS) initiative and examine this program through the lens of situated learning. Finally, I will propose an applied research project devised to determine the effectiveness of the OWLS initiative.

Background

More than 20 years ago, Jean Lave and Etienne Wenger (1991) proposed the theory of situated learning. This theory describes the process whereby individuals learn professional skills within the same context in which they are applied; for example, an electrician's apprentice might assist the mentor with a work-related task. Situated learning takes into account the social and physical environment, and views knowledge as something that is co-constructed by participants. This stands in contrast to an understanding of learning as simply a transmission of abstract knowledge from one individual to another.

Lave and Wenger (1991) also included in their theory the concept of community of practice (CoP)—the social arena in which situated learning can take place. A CoP is formed when a group of people who all belong to the same profession share experiences and information with one another in a way that serves to further their collective professional development.

Legitimate peripheral participation (LPP), the final component of Lave and Wenger's theory, lays out the process by which newcomers enter a CoP and eventually take on a more central role as their own mastery develops. Newcomers (or apprentices) to a CoP stay at the periphery at first, working on legitimate tasks but not yet taking responsibility for the final product. For example, the electrician's apprentice would be tasked with caring for tools or pulling wire, but would not be fully charged with completing the job independently. Newcomers gain experience and skills as they participate in assigned tasks situated within an authentic work

environment, and have access to masters (or mentors) they can both consult and observe at work. Discussion between newcomers and mentors is an essential part of the situated learning process; mentors explain approaches to specific problems or share their reasoning behind a certain decision, and newcomers then become co-participants and gain direct insight into the mentors' thought process. Through language, newcomers learn the vocabulary associated with the community and, along with an understanding of the basic skills and key principles, are then able to move towards a more central role.

With time, further mastery and increased responsibility, newcomers leave the periphery and become experts within the centre of the CoP. By continuing to participate in the CoP, they are able to further their own level of mastery whilst also supporting the development of peers and newcomers. Given all this, legitimate peripheral participation can also be used to explain why newcomers, with limited access to a CoP, may stagnate or experience slower rates of professional development—a situation potentially faced by many newcomers or beginning wilderness trip leaders in Ontario.

Lave and Wenger's theory of situated learning provides a useful framework through which to examine the apparent lack of social support and professional development for many beginning wilderness trip leaders in Ontario. By



applying it, we highlight the pressing need for a more robust community of practice (both within individual organizations and across the field as a whole), where beginning leaders have greater access to key mentors and are afforded the opportunity to develop their skills in a gradual and supportive manner. Considering this, could an interventional-type program be implemented to foster a CoP for wilderness trip leaders? Typically, CoPs evolve organically within a profession or organization; however, they can also be cultivated or contrived with the support of a program or planned initiative. In the winter of 2015, a colleague, Liz Kirk, and I began organizing the first Ontario Wilderness Leadership Symposium (OWLS) with the goal of bringing together members from this field to nurture this specific CoP.

Ontario Wilderness Leadership Symposium

To become sufficiently equipped to deal with the complex nature of their roles, emerging wilderness trip leaders require extended time spent in the field and under the mentorship of a competent professional. Ideally, a new wilderness trip leader would participate in a training pathway consisting of a variety of specialized outdoor leadership courses and/or certification programs, and also have the opportunity to lead in an authentic context while being coached by an experienced mentor. Although certification courses abound and are seen as an essential prerequisite to enter this field, access to a key mentor is not often a requirement or afforded to new wilderness leaders when beginning their careers.

Recognizing the perceived absence of social support for new professionals working in the area of wilderness leadership and the pronounced difficulty faced by organizations wanting to retain newcomers in this position longer than one or two seasons, we, along with the support of the Council of Outdoor Educators of Ontario (COEO), initiated an annual event

named the Ontario Wilderness Leadership Symposium (OWLS) in an attempt to connect newcomers with experienced professionals actively working in the field. Guided by Lave and Wenger's (1991) concept of community of practice, we proposed that the OWLS event and its particular design could function as an entryway by which emerging wilderness trip leaders could gain access to potential mentors, receive advice and support, further develop leadership skills, and build a professional peer network.

The first OWLS event took place in early May 2015 and was attended by 44 individuals. The group comprised 30 beginning leaders and 14 mentors. The event was a low-cost, three-day symposium with the ultimate goal of community building. Participants attended multiple workshops ranging from primitive fire making skills to expedition planning to a competitive campout cook off. Social interaction and fun were hallmarks of the event—prize draws, communal meals, campfire singsongs, square dancing and free time spent outdoors were all purposefully included in the program to encourage as much interaction and conversation as possible between participants.

Following the event, participants were invited to share feedback through an open-ended internet-based survey. Approximately 50% of participants responded to the survey. Many who responded choose to just simply share their gratitude towards the organizers; several others went into great detail, expressing a need for further learning opportunities or a mechanism by which they could stay connected. They suggested a series of workshops or day-trips that could take place throughout the year, as well as an online forum where they could communicate issues. It was determined that the OWLS initial event was successful in many ways, but that more would need to be done to sustain and grow this initiative.

Looking to the Future

Given the multiple barriers related to the nature of work undertaken by members in this profession (i.e., working in relative isolation, disconnection from peers and potential mentors, employed in different locations), maintaining and growing this particular CoP appears difficult. Effectively, the type of work being done by people in this profession prevents them from sharing information and experiences with a group of peers and learning from one another.

Moving forward we are now tasked with pinpointing what deliberate interventions may be required to maintain this CoP.



Specifically, we will determine, through qualitative methods, the mechanisms most effective in maintaining a CoP for wilderness trip leaders and ascertain how each may contribute to improving the professional development of members. To do so, we plan to examine the impact of the OWLS event and a variety of interventions on the maintenance of this CoP and the professional growth of its members. This will be accomplished by (a) identifying and

implementing multiple interventions to cultivate and sustain a CoP; (b) describing eight illuminative experiences that illustrate the effect of these interventions and discovering what factors are central to these learning experiences; and, (c) determining how involvement in this specific CoP may contribute to professional growth and attitudes towards seeking continued employment in the field.

Through this work, we aim to contribute to the existing scholarship on CoP and outdoor leadership. Our ultimate goal is to inform the employers, certification bodies and outdoor leadership course providers

of the specific factors that are key to the induction and ongoing professional development of wilderness trip leaders.

Conclusion

The work of wilderness trip leaders is complex and demanding. They must possess a varied and unique set of skills to successfully lead others through remote and often unforgiving landscapes. Yet these specialized skills take time to develop and are often quite difficult to learn independently. Ideally, beginning leaders would receive guidance and support from experienced mentors and be afforded the opportunity to perfect their leadership skills over time. Unfortunately, few wilderness trip leaders have the option of doing this, and many beginning leaders struggle in the absence of the necessary knowledge and experience to be capable and confident in their roles.

It is no surprise that others working in the field have recognized this training deficit and the difficulties experienced by new leaders. In fact, some large commercial wilderness trip providers (e.g., Canada's Black Feather) have created formalized apprenticeship programs within their organizations to support new guides. Going forward, social cognitive theories such as situated learning may provide us with additional approaches to understand the unique characteristics of these informal learning contexts and how the resources of employers might be best utilized to support learning and professional development of beginning wilderness trip leaders.

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Kyle Clarke is a doctoral student in the Faculty of Education at Queen's University.

malfeasance

By xavier o. datura

We no longer inhabit the space of our fathers.

—Michel Serres, *Malfeasance*

the hiss begat the clank
the clank begat the click-clack
the click-clack begat the choo-choo
the choo-choo begat the bang-bang

the bang-bang begat the ka-boom
the ka-boom begat the vroom-vroom
the vroom-vroom begat the tick-tock
the tick-tock begat the cuck-ku

the cuck-ku begat the twinkle-twinkle
the twinkle-twinkle begat the jingle-jangle
the jingle-jangle begat the cha-ching
the cha-ching begat the swoosh

the swoosh begat the boom-bap
the boom-bap begat the crack
the crack begat the buzz
the buzz begat the peeps

the peeps begat the pop
the pop begat the beep
the beep begat the bing
the bing begat the tweet

the tweet begat the zip
the zip begat the zoom
the zoom begat the fizz
the fizz begat the crash

...

the crash begat the croak
the croak begat the chirp
the chirp begat the howl
the howl begat the pitter-patter.

xavier o. datura is just another peasant. He can swing a pen like a blade tho.



Curriculum Encounters: Eighth Biennial Provoking Curriculum Conference

Faculty of Education, McGill University, Montreal, Canada

Co-sponsored by CACS (Canadian Association for Curriculum Studies)

February 17–19, 2017

Curriculum Encounters attends to how curriculum—never politically neutral, nor materially inert nor disembodied—is always in the making. We understand “making curriculum” as very different from the notion of curriculum (prevalent again) as a “management category” preoccupied with making a “language of input and output within a production system” (Aoki, 2005, p. 271). Instead, we know that making curriculum (as well as unmaking it) carries ethical

charges, opening us to encounters (past, present, future; expected and unexpected) with a plurality of voices, beings and bodies, which are all in movement. These encounters are in spaces that may be disciplinary, interdisciplinary or transitional/in between; through them, affective intensities may be produced, which can inspire new ethical charges.

The theme of the conference will include the following four thematic strands:



Plurality

Whose voices, beings or bodies need to be considered in our curriculum encounters? As Maxine Greene (and Hannah Arendt) remind us, plurality is “the condition of human action because we are all the same, that is, human, in such a way that nobody is ever the same as anyone else who ever lived, lives, or will live” (Greene, 1995, p. 155).

Spaces

What kinds of curricular spaces (e.g., disciplinary, interdisciplinary, transitional/ in between, *places d'accueil*) can be created to be open to a plurality of voices, beings and/or bodies? In what kinds of spaces are curriculum boundaries made and unmade? By whom, where and why? How can such reconfigurations contribute to projects of curricular reconstruction (Pinar, 2011)?

Intensities

Which curricular intensities will conduce to attuning and opening us to plurality and differences? What kinds will produce discomfort and provoke thinking? How can we become better attuned to the “affective discharges of the semiotic” (Lewkowich, 2015, p. 46) including instances “where the body takes over from...words” (Phillips in Lewkowich, 2015)?

Charges

What kinds of curricular charges (e.g., responsibilities, commitments, projects, movements) might emerge from these intensities so as to catalyze consciousness and move us towards more just and caring classrooms and curricula, ones that address such important contemporary issues as sustainability and wellbeing (Greene, 1995, p. 167) and that can continually bring us back to the question: “What is the significance of inviting people to take up what really matters to them?” (Chambers, 1998, p. 17).

Presentations will be in the form of papers and panels; poetry, arts-informed and performative pieces.

If you have any questions, please direct them to: provokingcurriculummcgill@gmail.com

Provoking Curriculum Organizing Committee

Teresa Strong-Wilson, co-president CACS, Mindy Carter, Margaret Dobson, Christian Ehret, Mitchell McLarnon, Shauna Rak, Layla Shuman, Lisa Starr, Amarou Yoder, Paul Zanazanian (McGill); Avril Aitken, co-president, CACS (Bishops); Sandra Chang-Kredl (Concordia)

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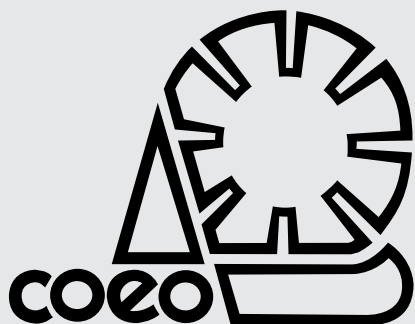
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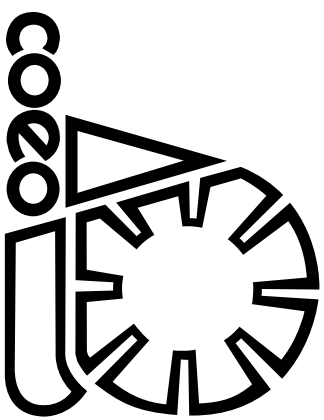
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