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A Surprising Discovery: Five Pedagogical Skills Outdoor and Experiential Educators have to offer more Mainstream Educators in this time of change.

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**A surprising discovery: five pedagogical skills outdoor and experiential educators
might offer more mainstream educators in this time of change.**

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Abstract

This paper draws from the experience of outdoor and experiential educators working in the context of a radical, long-term formal public education research project. One of the findings, arrived at accidentally from the research is that experienced outdoor educators may have particular pedagogical skills, likely honed by the contexts in which they work, that can be of use to mainstream educators trying to expand their pedagogical repertoire, teach outdoors or be more environmentally focussed in their practices. The paper begins by contextualising the Maple Ridge Environmental School Project (MRESP), describing the researchers, methods, and explaining how the research team came to their insights. This is followed by a discussion of five pedagogical skills identified by the researchers that outdoor and experiential educators may possess that might be offered more clearly to classroom teachers, formal teacher training processes and/or be more clearly enunciated for those involved in formal and informal outdoor and experiential training contexts.

Keywords

Outdoor, environmental, ecological, sustainability, pedagogical, skills, teacher-training, formal and informal education

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4 Mainstream education, at least in North America, is in a state of quite significant
5 flux. The Green Schools movement in the US is growing by leaps and bounds, it is
6 estimated at the time of writing this article that the number of forest schools in Canada has
7 more than doubled in the last twelve months and is set to repeat that increase over the next
8 twelve (Gershon, 2013) and the province of British Columbia, for example, is re-thinking its
9 curricular documents such that the focus is on big ideas and good thinking rather than
10 particular content knowledge (British Columbia Ministry of Education, 2013). Many
11 teachers, parents, and students are responding to the perceived incompleteness of an
12 educational project built more than a century ago. They are also responding to the
13 challenges regarding global interconnection and environmental degradation by actively
14 seeking thoughtful alternatives to the mainstream formal education system. It is to this
15 demand that we believe the field of outdoor and experiential education can respond
16 effectively in important ways, providing it understands what it has to offer. The thinking
17 within this paper and the research that informs it is our offering to help contribute towards
18 this process.
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31 32 **The Maple Ridge Environmental School Project** 33

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35 How might education play a role in the cultural change necessary to make
36 sustainability and ecological wellbeing a possibility? It was in response to this question
37 that the Maple Ridge Environmental School Project (MRESP) was born. In 2010, the
38 Community University Research Alliance (special Environmental Call), a branch of the
39 Social Sciences and Humanities Research Council of Canada, agreed to fund a research
40 project entitled, 'Aligning Education and Sustainability in Maple Ridge, BC: A Study of Place-
41 Based Ecological Schooling'. (Blenkinsop, S. & M. Fettes, 2009a) for five years. In the same
42 year, the local education authority school district board of trustees voted unanimously to
43 implement the project. Subsequently, the MRESP opened its metaphorical doors in
44 September 2011 (see: <http://es.sd42.ca/>). In 2015 the 'school' had a population of 88
45 students (aged four to twelve years old), four full-time teachers, two part-time teachers in
46 support roles, three educational assistants, and a principal. Quotations are used around the
47 term school in the previous sentence (but not subsequently) because this project is
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4 concerned with changing foundational metaphors that shape understandings of the nature
5 of education. Specifically, the school has no buildings, all the learning happens outdoors,
6 and there is an active process of questioning every component of mainstream
7 understandings related to school and schooling.
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10 The school is legally required to teach the British Columbia provincial curriculum.
11 However, the high degree of support from the local authority has provided a rare degree of
12 latitude to think creatively and work differently in order to explore new conceptions of
13 learning, teaching, assessment and evaluation while simultaneously pursuing a curriculum
14 that is place-based, community-based, emergent, experiential, outdoor, environmental,
15 sustainable and comprised of multi-aged groupings. The project's broader vision is not only
16 to offer the provincial curriculum in a new way, but also to change the culture of school and
17 potentially the wider culture as well. Thus, the underlying intention of the research, which
18 aligns with a vision of reviewing and re-orienting forms of education, is to determine how
19 or, indeed, whether prevailing societal culture can be transformed through public
20 schooling.
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30 In order to support this on-going and complex process a research team was created.
31 This group has been involved with the MRESP from the earliest discussions that focused on
32 re-imagining what might be possible, to the present situation of a fully functioning public
33 school. The Eco-learning Research Group includes professors, graduate students and
34 postdoctoral fellows consisting, since the school opened in 2011, of a core of approximately
35 twelve people. The members of the research team bring together a breadth of skills and
36 experience ranging from environmental education to indigenous education, philosophy and
37 linguistics. Five members of the research team, described in more depth below, also
38 brought significant experience as environmental, outdoor, and experiential education
39 practitioners.
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50 **The Researchers and Accompanying Method**

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54 The MRESP research is situated within an interpretivist paradigm that recognises
55 the intimate interaction between the researchers, the nature of the questions being
56 explored and the intended audience (Hatch, 2002). The researchers acknowledge that their
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3 individual, social and cultural backgrounds inevitably contributed to the dialogue from
4 which the findings emerged. For the purposes of this work there were five researchers
5 involved: one professor, two post-doctoral fellows, and two doctoral students. All five of
6 the researchers have been immersed in the project from the first day of the school's
7 operation and two were involved in the earliest 'blue sky' discussions. The two lead
8 author- researchers come quite clearly from the outdoor and experiential field with
9 significant experience in extended wilderness trip settings and in more residential outdoor
10 programmes. One of the doctoral students has extended experience in residential
11 environmental and park interpretive settings, another member of the team has a long
12 history in wilderness therapy, and the final member has experience in urban
13 environmental settings and programmes for at-risk youth. The point is that this is an
14 experienced group of outdoor, environmental and experiential educators and researchers,
15 with little formal teacher training (only one member of the five is a certified teacher), who
16 found themselves involved in an innovative, nascent outdoor public school working with
17 several very experienced (two of the teachers had more than 20 years experience each in
18 the public system), and formally trained, mainstream public school educators. For the
19 purpose of this article we will refer to the five researchers as outdoor experiential
20 educators.

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22 The intention for the approach to research at MRESP was that of critical design
23 ethnography (Barab et al., 2004). Methods included researcher observations, interviews
24 (with teachers, parents, students, community members), blogs, group discussions,
25 community events, and student tracking. All members of the research team were actively
26 engaged in the project and took turns shadowing, engaging with, and even teaching the
27 teachers and students such that at least one researcher was present at the school every day
28 for the first two years. The team gathered an immense amount of data and, in addition to
29 in-the-field discussions, met on a weekly basis as a team to discuss findings, trends, and
30 future directions. And then a funny thing began to happen.

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32 In midst of this well-organized research agenda a surprising thread began to appear,
33 each of the five researchers mentioned above started to notice that they were often asking
34 themselves why the mainstream educators were not doing x or y. Why was it taking so
35 long to get the students organised? Why were they unwilling to jump onto what appeared

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4 to be obvious learning moments? Why didn't they sense some of the emotional movements
5 in their students or understand some of the potential educational affordances offered by
6 particular places? There were many more but what is important to note is that we were
7 not looking specifically in this direction. This growing series of responses, questions, and
8 even concerns came not from our research agenda but from our own experiences and
9 intuitions as outdoor educators, and then came into focus as a result of our roles as
10 educational researchers. Eventually these strange pedagogical missteps, or lacks in the
11 practices of the school's mainstream trained and experienced teachers, became an on-going
12 conversation for the research team members and the team began to thread them more
13 consistently into observations and interview questions.

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21 The notion of surprise and serendipity in research has seen some consideration
22 within research literature. Fine & Deegan (1996) devised three categories that help to
23 make sense of seemingly random research findings: temporal serendipity, serendipity
24 relations, and analytic serendipity. In the case of the research team at MRESP it is the latter
25 two that are most relevant. It was not so much the happening upon dramatic instances –
26 temporal serendipity (Fine & Deegan, 1996, p. 439) – that led to the findings discussed in
27 this paper, as the relatively unplanned coming together of a team of researchers who all
28 had a background in outdoor experiential education. As a result of the commonality of
29 previous work experience, the researchers' fieldwork observations presented themes that,
30 even in a broadly inductive research project, came as a surprise. However, it was also the
31 analytic serendipity of one researcher in the team who related the emergent themes to the
32 broader educational picture. With regard to the latter, Howe, McWilliam and Cross (2005),
33 suggest that peer collaboration can result in an incubation effect. So it would seem to be the
34 case among the research team at MRESP. It took a number of months before the team
35 recognised the patterns in the data as a research finding and began to consider its wider
36 meaning. Makri and Blandford (2012), propose that serendipity be considered as a
37 "conceptual space rather than a discrete concept" (p. 721) and that its subjectivity be
38 embraced. The serendipitous findings in this paper are, nevertheless, grounded in the real
39 world experience of the researchers and recorded as empirical data through field notes,
40 video, and photographic material.

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4 As a result of the process described above, the research team was, to our surprise,
5 led to think about our own pedagogical practices and how they might be offered to the
6 well-trained, thoughtful, and skilled teachers who were our colleagues at MRESP. We
7 noticed that we had pedagogical and practical skills, mostly learned through intuition, on-
8 the-job training, and good mentoring that were of significant use to these teachers and that,
9 we believe, could, upon recognition and description, be thoughtfully offered to others. It
10 was intriguing to note that for this experienced group of informal outdoor and experiential
11 educators we had under-estimated and under-recognized our skills, and that what was
12 pedagogically obvious to us was not obvious to the teachers involved in this project who
13 had a more traditional educational training and set of experiences.
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21 What we have done in this paper is to gather the particular pedagogical orientations
22 and dispositions, skills if you will, found through our observations, discussions, teacher
23 interviews and educator intuitions and worked to describe them more expansively. These
24 skills might then be offered, at least in the case of this research project, to mainstream
25 educators interested in becoming more outdoor, environmental, place-based, emergent
26 and/or experiential in their own teaching practices. It is hoped that this work might be
27 able to directly impact teacher training, particularly in formal systems interested in
28 expanding their student teachers' pedagogical repertoire, re-orienting towards a more
29 emergent, dynamic and sustainable curriculum, as well as informal systems in which
30 program directors and managers might explicitly recognize and train towards such skills.
31 Although some of the skills might be considered explicit experiential education or outdoor
32 leadership skills (see for example, Martin et al., 2006), we assert that some of the skills
33 described are often easily overlooked and deserve further attention. The remainder of this
34 paper will offer a summary of five skills that emerged through our research. It is important
35 to note that the skills we explore are contextual, and not intended to be simplistically
36 generalized.
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51 52 Managing rhythm, shape, and structure 53

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56 Everything about the context in which learning takes place communicates messages of
57 learning and teaching (Blenkinsop, S. & G. Judson, 2010b; Bingler, 1995; Taylor, 2003). In a
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4 conventional school much of the organizing, management, and direction are performed by
5 the buildings themselves. Shapiro (2012, p. 9) lists some of the ways in which the
6 architecture of a school building shapes a wide array of physical, cultural, epistemological,
7 and relational responses and behaviours. The normalised culture of school uses walls to
8 create boundaries, bells to trigger response behaviours, desk arrangements to indicate
9 relationships of power. These and many other elements of school life work holistically to
10 shape the actions and thoughts of students and teachers alike. Take these things away and
11 a potent, and sometimes unrecognized, set of teaching aids disappears. In terms of being
12 attuned to opportunities for rhythm and structure in the outdoors, the MRSEP researchers
13 repeatedly wondered why it took so long to organise a hike or why students would be
14 moved from strenuous activities directly into individual quiet reading. Eventually, it
15 became apparent that the formal teachers had relied so implicitly upon the buildings,
16 classrooms, bells, and school structures that when those assemblages were removed they
17 did not immediately either recognize their disappearance or implement the options that
18 might exist as replacements.
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30 For educators working in natural settings there are challenges of how to fulfill
31 curricular requirements, care for the learning of students, and find ways of maintaining the
32 engagement of students when none of the 'normal' physical and regulatory supports are
33 available. One notable example within the MRESP was the introduction of a daily 20-minute
34 reading time. The teachers instigated this in response to their own and parents' awareness
35 that the learning and teaching of literacy was not emerging spontaneously from the
36 activities that students and teachers were engaging in. It was decided that a set reading
37 time would take place first thing each morning. In an indoor classroom one might consider
38 the appropriate time for personal reading based on a sense of the mood of the children,
39 what else was planned for the day or, as recommended by senior education officials.
40 However, this enculturated habit of scheduled learning became particularly troublesome in
41 the outdoor context of the MRESP on cold or damp mornings where, to the researchers, it
42 seemed more intuitive to do something active at the beginning of the day to allow for
43 students to generate some heat. Furthermore, it made sense to the researchers to have the
44 reading matter connect with questions or themes that had emerged from activities such as
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3 forest walks and pond observations rather than be simply selected from a shelf or box and
4 then perhaps be taken on subsequent walks.
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7 With this example in mind, it is clear that effective teachers in the outdoors need to
8 be able to create a shape and rhythm for learning that works with the needs of the
9 students, maximises the affordances of the place where the class is being conducted, and is
10 flexible enough to respond to unknown variables such as weather and serendipitous
11 learning moments. Many teachers will have experienced the wild activity that can ensue
12 when taking a class outdoors or the disengagement caused by wet, cold students. The
13 outdoor teacher needs to guide students as they learn how to express and contain
14 themselves at the same time, as students internalize the new norms.
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21 Natural spaces provide particular rhythms and structural affordances for teaching
22 and learning. There are areas that lend themselves to the release of energy and others that
23 suggest quietness, some places for reflection and others for wonder. Becoming aware of
24 and sensitive to one's surroundings is fundamental to personal and environmental
25 understanding. Experienced outdoor and experiential educators constantly adapt to, intuit,
26 and make the most of the surrounding natural environs to facilitate structured worthwhile
27 experiences for students (Thomas, 2008). Teachers need to develop these skills for
28 themselves but also to encourage and support students as they learn the language of nature
29 and develop their sensitivity to the natural world around them. Such teaching is no easy
30 task. It requires not only flexibility but also rigorous direction, in its way as strict as the
31 routine and regulation of the traditional school. As Abram (1997) suggests, teachers must
32 find ways to help students breathe the day and allow themselves to be breathed in turn.
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45 #2 Lateral thinking – the dirty sock curriculum

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48 This category arose the most clearly from the researchers' on-going observations of
49 the teachers as they wrestled with shifting their practices from one that could be carefully
50 pre-planned to one that was more spontaneous, emergent, progressive, and responsive to
51 the emotional realities and interests of the students, and the affordances of place.. We came
52 to describe this seemingly under-developed skill as 'lateral thinking', but also realized that
53 there was a deeper epistemological question in play.
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4 To situate lateral thinking we begin with an idea. Imagine a dirty sock or, better yet,
5 go outside and get your own socks dirty. Now, imagine how you might use that dirty sock
6 as a point of departure for a 75-minute lesson on advanced calculus, a month-long unit in
7 social studies for grade 8 students, or even the entire grade 2 curriculum. If you can use a
8 dirty sock to inspire and advance your curriculum and its learning outcomes, you are
9 certainly able to meet curricular obligations starting from whatever you might encounter
10 outdoors, be it a giant old-growth Western Red Cedar, a sudden bloom of spider webs, or a
11 pile of sand left by a construction crew. If you are able to make new connections, discover
12 new metaphors, and get your students engaged and excited by this process you betray an
13 aptitude for lateral thinking. But lateral thinking is much easier said than done, so what are
14 its key ingredients? We suggest there are at least two: an unconstrained curiosity and a
15 flexibility of mind. And it is in the overlap of these ingredients, in which a significant shift in
16 the epistemology is revealed.

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18 The first ingredient is a specific kind of curiosity, a 'wild' curiosity if you will. A form
19 of curiosity that might be honed particularly working within complex, diverse and
20 unpredictable outdoor settings. The MRESP teachers, used to working in the classroom
21 with an array of prepared texts and resources, were in many ways under-prepared when it
22 came to supporting progressive, expansive learning with their students that emerged from
23 explicit experiences within the natural world or their own imaginations (Maynard and
24 Waters, 2007). One reason for this, we believe, is related to a kind of curiosity that might be
25 termed a 'guided' curiosity. For example, a tourist on a guided tour might read all the
26 signboards posted at the local park, enjoy the ranger-talks on various subjects and watch
27 the historical films offered in the parks visitor centre. In such a case, the tourist may not
28 seek out new experiences beyond what is readily accessible. This is a curiosity that tends
29 not to venture beyond the signposts. Despite an active interest, there is passivity involved -
30 a lack of opportunity and awe that might inspire one to look further or seek explanations to
31 questions raised by the information provided. An alternative kind of curiosity is 'wilder'
32 (Smith, 2007), undomesticated, less constrained. We move from a metaphor of guided
33 tourist to one of explorer. Explorers might pursue ideas, ask further questions, head into
34 the backcountry and by-waters of knowledge, take risks, follow their interests and seek out
35 understanding. It is their ability to ask deeper questions that makes them ideally suited to

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3 inspire the curiosity of individualised learners. They are curious but, more importantly,
4 they see themselves as being capable of solving intellectual problems that might emerge
5 from their surrounds and find explanations to almost any question that might interest them
6 or their fellow travellers, and they derive enjoyment doing it. When such qualities occur in
7 combination with that fundamental quality of a superb teacher - an interest in the learning
8 of the others - they are able to partner with learners to help them formulate questions and
9 to understand what it feels like to really come to know something. This untamed curiosity
10 must be complemented, however, by a second component of lateral thinking – intellectual
11 flexibility.

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13 Intellectual flexibility involves a versatility that makes connections between and
14 amongst things that are not readily apparent in more direct ways. This kind of flexibility
15 tends to be characterized by such things as sophistication with metaphor and nuance, but it
16 also implies the imaginative awareness of the potential of everyday things, people and
17 events: the weather, people passing on the street, machines working, even that dirty sock.
18 From the sock there is a connection to cotton and to black slavery, also to geography, while
19 dirt opens the possibility of its analysis and scientific method, as well as to issues of
20 hygiene. Such flexibility allows one to expand from a single lesson to an integrated unit and
21 to encourage students to go beyond textbook learning to independent learning sparked
22 from real world phenomena. The challenge for the teacher is to be able to find ways to
23 attend to each child's interests and learning needs as well as those of the class as a whole,
24 to prioritise space for the involvement of the spontaneous and emergent world as co-
25 teacher (Blenkinsop, S. & C. Beeman, 2010a), and ensure that curricular requirements are
26 met.

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28 The teachers at MRESP did not necessarily lack for ideas to begin something, nor a
29 sympathy towards a constructivist notion of learning, nor a willingness to allow students to
30 use their personal interests as a starting point for learning. It appeared, however, that the
31 habit of a modular approach to learning and teaching – whether that be related to a
32 curricular area, specific topic, or the 'lifetime' of a learning episode – was difficult to break.
33 An excerpt from the fieldwork research blog illustrates this:

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4 “On the way back [student] asked [teacher] why we get hot. [Teacher] said it was
5 because we had too many clothes on now that we were walking. [Student]– ‘No, I mean
6 why do our bodies get hot?’ So over the next 10 minutes as they walked along [teacher]
7 explained some basics of cells and energy.” 7th May 2012.
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12 The willingness of the teacher to engage so fully with the student’s question
13 demonstrates the commitment of the teacher to the individual student and an openness to
14 working from emergent learning moments. However, this moment remained just that, a
15 moment. It was not used as a catalyst to journey more deeply into the specific question or
16 into connected areas, either with the individual student or the student group as a whole.
17 Moore (2004) points to some of the complexities in teacher education discourse, one of
18 which is the notion of teacher competencies. Moore (ibid) suggests that attempts to
19 compile key teacher competencies are vexed with the well-intentioned desire to be
20 comprehensive which, in turn, leads to the unfortunate tendency of the list being seen as
21 definitive. This is one example of the ways in which both teachers and students are
22 influenced by a system that constantly suggests limits and boundaries – bells, walls, subject
23 areas, teacher competencies, and so on and so forth. It is here that we believe outdoor and
24 experiential education might offer a significant contribution to the more formal version of
25 education. Indeed, we suggest that this is a different epistemological position. Lateral
26 thinking, wild curiosity and mental flexibility are part and parcel of a way of thinking that
27 understands knowledge and meaning-making as fluid, complex, interconnected, and deep
28 (Egan, 2010). Guided curiosity, the passive consumptive model, and focus on experts, on
29 the other hand, are all products of an epistemology that understands knowledge as inert,
30 fragmented, fully understood, and available in bite-sized chunks to the growing knower.
31 The latter appeared, at times, as the epistemology of the mainstream teachers we were
32 working with in the outdoors.
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50 Perhaps the most significant discovery for us as researchers is that there is no
51 coherent discussion across the fields of outdoor, environmental, and experiential education
52 which points to our epistemological commitments and the possibility that our practices are
53 themselves a radical departure from the assumed concepts of knowledge and meaning
54 making that has buttressed modern western public education for more than 150 years.
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3 Numerous authors (see for example, Allison & Pomeroy, 2000; Beames and Ross, 2010;
4 Harrison, 2010; Nicol, 2003; Stevenson, 2007; Williams, 2013) have referenced the
5 importance of an epistemological awareness for reasons ranging from co-construction of
6 and diversity of learning, to environmental connection, and to the practice of research.
7 However, these remain disparate discussions, rarely explicate expansively on an
8 epistemological position and its corollary pedagogical implications, and have not motivated
9 direct responses such that a progressive, evolving conversation has emerged in the sector.
10 Hill (2012) asserts that, despite a growing body of conceptual work in outdoor education
11 research, “outdoor education remains a fledgling and theoretically underdeveloped field
12 which is yet to come to grips with issues of identity, philosophy, epistemology,
13 methodology, pedagogy, and content” (p. 18). What might happen if we were made more
14 aware of these kinds of differences during our informal educator trainings, or if such
15 alternatives were readily articulated within formal educator training?
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29 #3 Risky learning: living with uncertainty and anticipating the unexpected

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32 The role of risk in learning is a well-known concept among outdoor educators (Brown and
33 Fraser, 2009), and is commonly discussed in terms of physical or emotional versions that
34 students are exposed to. Although these are important contributions that can be made to
35 mainstream teachers exploring outdoor and experiential education, there is a different type
36 of risk that we have observed to be common practice for outdoor educators and we believe
37 is more significant given our previous epistemological discussion, when considering
38 education writ large. It works on at least two levels that both flow from an ‘emergent
39 curriculum’ (Jones & Nimmo, 1994; Jones, Evans, & Stritzel Rencken, 2001) alluded to
40 earlier that is supported by the teacher’s lateral thinking. The two levels of uncertainty that
41 the MRESP teachers appeared to struggle with were i) the uncertainty of having to trust the
42 learner and the environment, and ii) the uncertainty of having to trust the process. Trusting
43 the learner and the process of learning are espoused values of experiential education (AEE,
44 2015). Although these values are not easily brought to fruition (see for example, Estes,
45 2004; Thomas, 2010), they are a key component of many outdoor and experiential
46 educators’ thinking and practice (Martin et al., 2006).
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4 The first level of uncertainty is authentically encountered when an educator truly
5 allows the natural world and the local environment to enter into the learning process.
6 During any day the educator in outdoor settings must trust that myriad spontaneous
7 learning moments will emerge, and that as a skilful outdoor educator they will be able to
8 recognise the opportunity and pursue the learning that it offers. A teacher in this kind of
9 unpredictable but fertile environment needs to prepare in a very different way from their
10 counterparts in a more conventional setting, but prepare they absolutely must. Learning to
11 listen to what the environment has to offer is a key skill in terms of place-conscious
12 outdoor learning (Greenwood, 2013, p. 98). Just as Dewey (1938) warned that the greatest
13 threat to his philosophy of education was the assumption that it could be an improvised
14 practice, so the spontaneous and immersed educator must not assume that they can
15 educate on an *ad hoc* basis (Jones & Nimmo, 1994, p. 5). There is a great deal of humble,
16 background preparation that goes into this type of teaching.

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18 Many outdoor educators focused on environmental learning are intimately familiar
19 with the context and place in which she/he works and are therefore able to recognize and
20 maximize the educational potential of a learning moment when they arise. Although such a
21 place-responsive focus is not always the case within outdoor education practice (Wattchow
22 and Brown, 2011), it is this kind of preparation, that comes from recognising place as both
23 co-educator and curricular source, that our field can potentially offer mainstream
24 educators. If teachers in the outdoors are going to mitigate, as far as possible, the risk of
25 trusting place and process they must learn to constantly review and renew their sensitivity
26 to moments and places where learning might occur. The goal is that the teacher is able to
27 approach any situation that emerges and, having done the preparation with regards to each
28 student and to the curriculum, and having carefully nurtured that curiosity of the world
29 and the flexibility to respond to it, is able to make use of that situation to generate learning.
30 The apparent spontaneity of good teaching and learning outdoors is about neither creating
31 lessons that target particular objectives nor sitting back and waiting for something to
32 happen, but about preparing to build on pedagogically fecund moments as and when they
33 arise. This kind of teaching challenges the educator to prepare the students and to trust in
34 the students to locate themselves in the place in such a way that they too are able to intuit
35 the materialisation of learning moments.

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4 The development of comfort with uncertainty is also crucial for educators at a
5 second level. Nobody knows what a future of ecological flourishing/sustainability really
6 looks like on a national or international scale, nor exactly what we need to do to get there.
7 Any project of cultural change towards more just and sustainable communities is
8 inherently uncertain and experimental. The educator must accept the risk of potentially
9 having to change their pedagogy, of enduring the scepticism of fellow professionals, as well
10 as recognise that even the changes and possibilities proposed here are incomplete and
11 likely in need of changing themselves.
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19 #4 Safety 20 21 22

23 Safety management is at the forefront of many outdoor and experiential education
24 texts and programs (Davidson, 2004; Priest and Gass, 2005), however, it does not always
25 feature as prominently within traditional teacher training courses. It was clear through
26 observations and interviews with the teachers at MRESP that they did not have the risk
27 habit of mind and experience-based judgement that so many outdoor programs focus their
28 trainings on. The teachers had little background with considering risks in an outdoor
29 environment, the process of thinking through and writing up risk management plans and
30 local operating procedures, training students to be actively aware and develop judgement
31 in their own right, and the immediate site awareness and constant surveillance that
32 becomes second nature to many experienced outdoor educators. It was apparent that this
33 area of physical safety was one that we, the group of researchers, had not only something
34 to offer but was an area in which we had all had direct training.
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45 Just as with the laterality of mind mentioned earlier, there is a flexibility of mind
46 that is necessary when considering safety in the outdoors. Risk management processes and
47 plans are important tools in managing safety outdoors, however, there are additional
48 subtle understandings that many outdoor educators can bring to the table. Knowledge and
49 attunement towards environmental factors such as weather and particularities of place are
50 key factors in managing outdoor safety (Brookes, 2011). Re-visiting a particular place, for
51 example, may have educational benefits but there are also potentially taken-for-granted
52 safety considerations involved. While experienced outdoor educators can appear, at times,
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4 to have a pre-emptive sense of likely safety issues for their charges, this well-honed sense
5 of attunement with the surrounding environment often has its seeds in the hard work and
6 experience of getting to know a place, its particularities, localised weather conditions, and
7 the individual students involved.
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10 It is in this area of safety that we believe the outdoor experiential educators can
11 offer clearly tangible support for mainstream educators expanding their practice into the
12 outdoors. There are few standards present with regard to safety in Canada. In fact, having
13 witnessed several public schools go through this process in Canada, school districts can be
14 woefully under-prepared to assist schools, administrators, teachers, and parents with
15 regard to risk management plans, hazard assessments, response plans, and teacher
16 trainings. To us this clearly represents a breach into which our field might step for
17 educative and moral reasons.
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25 26 27 #5: 'Eco-reflection' and evaluation 28 29

30 For most outdoor educators, especially those influenced by experiential education,
31 reflection is a necessary part of the educational and, by extension, personal process.
32 Coghlan and Brannick (2005) refer to a habit of systematic reflexivity as, "the constant
33 analysis of one's own theoretical and methodological presuppositions" (p. 6). Analysis of
34 the methodological presuppositions that underpin pedagogy is an essential habit for an
35 educator committed to maturing their practice. Such a task calls for an on-going, profound
36 process of evaluation. Stevenson's (2007) succinct analysis of some of the contradictions
37 inherent within attempts to bring environmental or sustainability education into
38 mainstream schooling highlight that deep levels of reflexivity are crucial to working within
39 projects that count cultural change as a principle aim (e.g. any striving for serious
40 ecological or social change) but likely also for any educator trying to move outside the
41 current norms of public education. The MRESP teachers appeared to lack a developed
42 reflective practice that allowed for the kinds of reflection able to move beyond that which is
43 already allowed within the field. Without a conscious practice of questioning the
44 epistemological and even ontological assumptions that underpin mainstream education
45 (Beeman, C. & S. Blenkinsop, 2009), environmental and sustainability education will
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4 continue to be hamstrung by the limits of thought imposed by the dominant culture;
5 sincere, committed efforts that gain little traction and often, sadly, end up as little more
6 than green-washing. The sustainability educator needs to maintain a hyperactive sense of
7 awareness and thoughtfulness such that reflection becomes a critical element of life in
8 general and pedagogical practice in particular. The areas of reflection and the ways they
9 are enacted might change as new eco-habits and ways of being establish themselves over
10 time, but for the sake of this discussion reflection has been separated into five different
11 areas, overlapping and inter-linked, and all contributing in necessary ways to a dynamic
12 practice. The first three are, we suggest, fairly common to good practice whether indoors
13 or outdoors, formal or informal, traditional or more experiential. The last two are those
14 that we discovered needed further development by all, ourselves included, if we were to
15 honour the larger mandate of cultural change.
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25 The first area of reflection focuses on the situation of the teacher and involves self-
26 examination questions such as: Why am I choosing to do x and not y right now? How am I
27 deepening my own understanding and connection to this context? And, what are my
28 strengths and limitations with regard to the principles and values espoused? The second
29 area of reflection focuses on the students, individually and as a group, e.g. Who are these
30 students as people and learners? What learning did I witness today? And, where does it
31 make sense to go from here? The third area, building on the first two, is a co-reflection
32 with others whereby many of the same questions from areas one and two are asked, but
33 the answers are gathered from the community, thereby expanding the understanding of an
34 individual teacher. This involvement of a larger group, including parents, teachers, the
35 students themselves allows the change focussed teacher to learn from others, to plan with
36 others, to better understand the students through the eyes of others, and to better make
37 sense of themselves, the school, and the place. These three areas are well developed in
38 teacher education although, as authors such as Ball (2004) and Britzman (1994) point out,
39 the increasing culture of performance and conformism (Mansell, 2007) leaves little room
40 for anything beyond an evaluation of lessons relative to performance criteria that are made
41 explicit to a greater or lesser degree. It certainly does not encourage the sort of reflexivity
42 that attempts to critique the personal, social, and political roots of existing systems and
43 practices (Bourdieu & Wacquant, 1992; Kahn, 2010).
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4 The fourth area of reflection focuses on hearing from those who are usually unheard
5 from. In the case of MRESP this means, among others, actively attending to the presence of
6 the more-than-human world within educational practice, the school, and the community
7 (Blenkinsop, S. & C. Beeman, 2010a). This involves a move beyond areas of reflection that
8 are simply part of good teaching. In some ways it is an extension of the third area, but we
9 found that it requires its own category as it is easily overlooked. This 'eco-reflection'
10 involves being able to actually hear from the non-human and includes questions such as:
11 Have we been successful in integrating the natural world? What is happening here? How
12 did we learn from and involve the more-than-human today? In what ways were we known
13 by the more-than-human today? And, in what ways can and did the place make a difference
14 in our practices? The fifth and final area of reflection operates at a meta-reflective level and
15 focuses upon the situation of the larger community, the goals of that community, and the
16 successes and failures related to the larger conversation of cultural change. Without this
17 kind of reflection the entire project of change would be for naught. It is here that the
18 teacher might pose questions about what is supporting or getting in the way of this larger
19 project of cultural change: What kinds of traditions, metaphors, systems, and boundaries
20 are establishing themselves in these new, more ecologically aware practices and are those
21 appropriate? What infrastructure, both physical and psychological, of the conventional
22 school system supports or inhibits this work? And, what kinds of changes might we need to
23 foster our collective progress in order to inspire the cultivation of a truly ecological
24 approach to education?
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41 Outdoor and experiential education has a well-established history of integrating
42 reflection as part of the learning process (Breunig, 2008). Group debriefs, personal
43 reflections, collaborative discussions with co-teachers, and solo experiences are just a few
44 examples of the way in which reflection and evaluation is woven into, normalised, and
45 taken for granted in outdoor experiential education in a way that is not always so actively
46 part and parcel of a mainstream teacher's toolkit. Additionally, what is not standard
47 practice in either mainstream or outdoor education is the filter of cultural change and
48 ecological consciousness that we are proposing as necessary for at least the
49 environmentally and sustainability focussed teacher. Developing a skilful practice of self-
50 evaluation and reflexivity is essential for clarifying a vision and protecting against the sort
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3 of self-destruction, co-optation (Kahn, 2010), and dominant culture resilience (Fettes, in
4 press) that can undermine a project of cultural change.
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7 8 **Concluding Comments** 9

10 We are not seeking to suggest that outdoor, environmental and/or experiential
11 practices provide the answers for the educational and cultural change necessary to
12 promote cultural change, sustainability, and environmental health. Rather, we are
13 suggesting that in the context of the MRESP, the outdoor and experiential educators
14 operating as researchers came to recognise in themselves several crucial pedagogical skills
15 that were useful in co-creating engaging, outdoor environmentally and educationally
16 worthwhile experiences, and that were not easily accessed by teachers from a more
17 traditional indoor classroom context. Further, that these skills (and others), when
18 articulated and highlighted, may be of value to educators and training institutions seeking
19 to expand their pedagogic repertoire.
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28 Intriguingly it took our work with the MRESP, a fairly radical example of the
29 educational response described, in order for us to much more clearly enunciate the skills
30 we have developed over many years. Habits of mind and curiosity that support more
31 individualized, spontaneous, place-based, and emergent curricula have long been part of
32 outdoor and experiential education's somewhat unconscious repertoire and bringing them
33 consciously to the fore both in our trainings within the field and in our growing offerings to
34 the formal system will be important to this work. It is also quite clear that our
35 understanding of the full range of risks and our willingness to take them alongside our
36 students will need to be a component of an educator's toolkit if we are going to help our
37 students respond to the growing uncertainty of the global future. Finally, and possibly most
38 importantly, our epistemological orientation and its differences from the current
39 assumptions of the mainstream might provide a well-spring from which this new
40 educational movement might grow. We must find ways to more clearly train ourselves in
41 these areas but also to insert ourselves into the mainstream educational change
42 conversations that are burgeoning at this moment.
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55 We believe that education needs to be reviewed and re-oriented at a deep level in
56 order that progress towards an ecologically equitable and flourishing planet might begin to
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4 be possible. Educators oriented towards such a future need a range of skills as they work
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6 with curricula content and teach in a way that promotes a concurrent process of
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8 decolonisation and reinhabitation (Greenwood, 2003) of the places students hopefully
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10 come to inhabit or dwell in, rather than reside in (Orr, 1994). Outdoor experiences alone
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12 are not sufficient to provoke, motivate, or instigate the sort of cultural change necessary to
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14 move towards sustainability and beyond. This paper highlights five pedagogical skills
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16 common to the field of outdoor education that may be less practised in a mainstream
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18 environmental educator's toolkit. The five skills described should not be understood as a
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20 finite list generalizable to all contexts. They are intended as a springboard for thinking
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22 about the sorts of skills and habits of mind that can contribute to processes of support and
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24 training for teachers looking to develop practices that will aid them in teaching towards the
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26 flourishing of both the human and more-than-human worlds.
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