



RECONNECTING CHILDREN

THROUGH OUTDOOR EDUCATION

A RESEARCH SUMMARY

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**RECONNECTING CHILDREN
THROUGH OUTDOOR EDUCATION**
A Research Summary

Andrea Foster, B.A., M.A. COEO Project Coordinator
Grant Linney, B.A., B.Ed., M.Ed. COEO Past President

The Council of Outdoor Educators of Ontario



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Mary Jeanne Barrett, Ph.D. Candidate, University of Regina; Dr. Peter D. Carter, Canadian Association of Physicians for the Environment (CAPE); Judy Kramer, Site Supervisor, Warren Park Outdoor Education Centre, Toronto District School Board; Zabe MacEachren, Coordinator, Outdoor and Experiential Education, Faculty of Education, Queen's University; Barrie Martin, Consultant, Yours Outdoors (Martin and Associates); Sandee Sharpe, Site Supervisor, Forest Valley Outdoor Education Centre, Toronto District School Board.

About COEO

The Council of Outdoor Educators of Ontario (COEO) is a non-profit, volunteer-based organization that promotes safe and high-quality outdoor and experiential education as a unique and powerful learning methodology for people of all ages. It also acts as a professional body for outdoor educators in Ontario, Canada.

COEO's Goals

COEO aims to

- establish and maintain professional practices in the field of outdoor education
- promote qualified leadership in outdoor education
- provide opportunities for professional growth
- promote the multiple values of outdoor education, both within and beyond our profession
- promote an active environmental ethic as a core value of education.

These goals are achieved through publishing the quarterly *Pathways: The Ontario Journal of Outdoor Education* as well as an electronic newsletter, running an annual conference and regional workshops, maintaining a Web site, and working with kindred organizations as well as government agencies.

For more information, visit www.coeo.org.

EXECUTIVE SUMMARY

Outdoor and experiential education (OEE) is a vital learning methodology for today's children and young people. Its provision of safe, educator-framed and hands-on experiences in outdoor settings generates unique, vital and lasting benefits in terms of education for curriculum and community, education for character, education for wellbeing, and education for environment. This summary is a compelling synthesis of a wide variety of current outcomes-based research. It offers concrete evidence as to why OEE should become an essential and publicly funded part of education for the future.

OEE relates curricula to real-life situations. Research shows that, compared to non-OEE students, students using OEE and the local environment as a comprehensive focus and framework for curricula demonstrate, among other things,

- increased engagement with and enthusiasm for learning
- improved academic performance, including better language skills
- greater sense of pride and ownership in accomplishments
- a variety of substantially increased critical thinking skills.

OEE promotes lifelong physical, emotional and spiritual wellbeing. A growing body of studies suggests that

- contact with nature is as important to children as good nutrition and adequate sleep
- time spent outdoors correlates with increased physical activity and fitness in children
- exposure to green space reduces crime and increases individuals' wellbeing and ability to focus
- children as young as five have shown a significant reduction in the symptoms of Attention Deficit Disorder when they are engaged in outdoor activities in natural settings.

OEE educates for character. It provides powerful opportunities for extensive personal and interpersonal growth, particularly when trained outdoor educators are involved in all aspects of the program. Major research studies have found that

- many character traits are significantly enhanced as a result of OEE experiences, including creativity, enthusiasm, self-motivation, self-understanding, assertiveness, maturity, independence and self-confidence
- many social skills are also enhanced through OEE experiences, including cooperation, effective communication, decision making, problem solving, task leadership and social competence
- OEE promotes marked improvements in behaviour for special populations such as at-risk youth. Retention and continued growth in these areas is also evident as a result of such hands-on experiences.

Finally, and in the authors' opinion most importantly, **OEE directly exposes children and youth to the natural environment in ways that develop powerful, knowledgeable and lifelong connections essential for a healthy and sustainable future.** Leading Canadians such as Robert Bateman, Thomas Homer-Dixon and David Suzuki all strongly agree and are quoted in this document.

Research also shows that

- early, sequenced and repeated experiences in the outdoors develop in children a kinship with nature that can evolve into an informed, proactive and lifelong stewardship of the natural environment
- there are great benefits in the use of outdoor education methodologies for environmental education purposes
- children love to be part of the solution – especially when they are able to see the effects of their positive interaction with nature first-hand.



**I hear and I forget.
I see and I remember.
I do and I understand.**
Confucius

Evidence-Based Recommendations for OEE as a Necessary Agent of Childhood Development

As a result of these findings, The Council of Outdoor Educators of Ontario (COEO) urges government, parents, volunteer leaders and other community members to actively reclaim the outdoors as a safe, fulfilling and essential part of growing up in this province and beyond.

COEO also makes the following major recommendations to the Ontario government:

- 1)** Formally recognize the value of Outdoor and Experiential Education (OEE) as a unique and powerful learning methodology that particularly addresses the pressing need of education for environment as well education for character, wellbeing, and curriculum.
- 2)** Develop a comprehensive across-all-grades sequence of school-based outdoor activities that address the four values of OEE and particularly education for environment.
- 3)** Provide funding to school boards so that every student is assured a minimum of two one-day OEE programs and one five-day OEE program at recognized outdoor education centres.
- 4)** Mandate that OEE is a recognized area of specialization at the Primary, Junior, Intermediate and Senior levels in all Ontario faculties of education.

The postgraduate schools of Canadian universities are also urged to promote further Canadian-based research into the various powerful and lasting benefits of OEE for our elementary and secondary school students.





INTRODUCTION

Children thrive in outdoor learning settings

Neighbourhoods today are very different from those of a few decades ago; there are noticeably fewer children outside. In the past, playing outdoors, exploring a variety of wild places – ravines, fields, forests, gardens, streams, vacant lots, parks and yards – was the norm. Not only did children have the freedom to “go outside and play,” but they were often encouraged to do just that. The lifelong learning that accompanied such free time in natural settings was an experience many older generations took for granted.

Today, the climate of free play outdoors is remarkably different. Rather than venturing outside, children are spending an increasing amount of time indoors. More hours than ever before are spent plugging into various technologies, including television, personal computers and video games.¹ As more studies become available, it is evident that these changes are resulting in alarming health costs. According to the Ontario Medical Association, there are unprecedented numbers of children diagnosed with ADD and ADHD, as well as children being prescribed anti-depressants. Childhood obesity and related health problems are also at an all-time high.² Could it be that, through losing their connectedness with the outdoors, children are becoming disconnected from themselves as well as suffering severe health consequences?

Exacerbating this disconnection is a growing fear of outdoor landscapes. We are constantly warned about health threats when outside, be it West Nile virus from mosquitoes, Avian flu from birds, Lyme disease from deer, or roundworm infection from raccoons. This social paranoia is made worse by what American author Richard Louv refers to as “the criminalization of natural play”³ – a phenomenon exemplified by the proliferation of “No Trespassing” signs as well as new regulations, procedures and legal waivers for all manner of outdoor activities. Landowners, school boards and program providers are doing everything possible to protect themselves from the constantly expanding parameters of liability and, in the process, making it increasingly difficult for children to freely experience their natural surroundings. Finally, our modern media’s headline coverage of isolated

instances of paedophilia and other “stranger dangers” makes parents constantly fearful of allowing their children to play or travel outdoors unaccompanied.

Amidst the proliferation of such fears, many solutions exist to reconnect children with nature and, by extension, with others and themselves. For a start, outdoor-loving adults can embrace the role of “nature mentor.” Environmentalist Rachel Carson writes: “If a child is to keep alive his inborn sense of wonder, he needs the companionship of at least one adult who can share it, rediscovering with him the joy, excitement, and mystery of the world we live in.”⁴ This mentor can be a parent, a teacher or a community leader, and the companionship can be as simple as parents rotating the supervision of free playtime in a local park, or a classroom teacher taking students to explore and/or clean up a nearby ravine.

In conjunction with parents, teachers and community leaders, trained outdoor educators working with school boards and other providers are vital to realizing the four key values of outdoor and experiential education (OEE):

OEE educates for curriculum and community: It provides hands-on links to a great variety of curricula and it does so in integrated and transdisciplinary ways that enable students to more readily transfer learnings to their everyday lives.

OEE educates for wellbeing: It offers exposure to and safe development of a wide variety of engaging and environmentally sustainable outdoor activities that promote lifelong physical, emotional and spiritual wellbeing.

OEE educates for character: Its focussed and compelling experiential situations are ideal for developing in participants positive character traits such as self-confidence and a sense of responsibility for oneself and others, as well as social skills such as effective communication and group decision making.

OEE educates for environment: This is of particular importance in these times. It brings participants into direct contact with the life support systems of this planet and, in so doing, provides an essential foundation for ecological literacy and stewardship.

OEE has many forms and takes place in a variety of local and remote, urban and wilderness settings – field centres, canoe trips, high school interdisciplinary programs, private camps, school-accredited Outward Bound courses, public

agencies such as the YMCA, school ground greening projects and others. OEE fits seamlessly into a wide variety of school curricula, including science and numerous ecosystem field studies; guided walks and exercises in historical neighbourhoods; math (numeracy) – measurements of plant growth; geography – GPS mapping; social studies – local naturalization projects; physical education – cross-country skiing; literacy – written / verbal reflections elicited from students regarding their outdoor education experiences.

With the support of dedicated parents, teachers, community leaders, school board trustees and policy makers, we can work towards reconnecting children with nature, themselves and others. To do this, however, policies that secure the future of OEE must be in place.

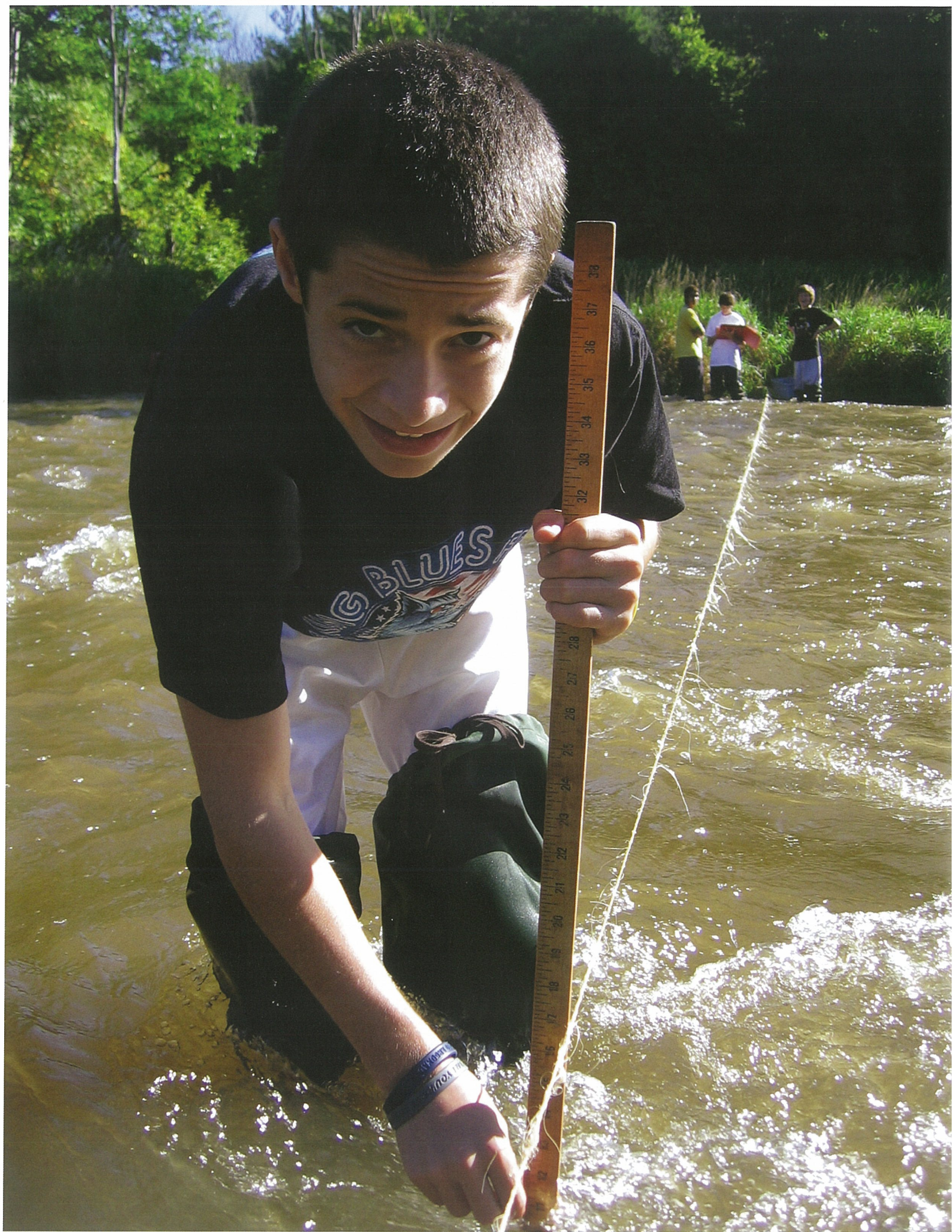
Experiential Learning: Learning by Doing

Outdoor and experiential education (OEE) distinguishes itself from classroom learning by using the student's whole environment as a source of knowledge. Communities, rather than the classroom alone, are the focus for learning. While learning about the environment is a significant concern, OEE encompasses more than studies of nature. It uses the outdoors – both natural and constructed – to promote learning from experience, and it can be used to enrich every curriculum subject.

John Dewey, one of the originators of experiential education, saw school as a miniature democratic society, with experiential learning as an essential part of civics education. Students prepare for adult civic responsibility by practicing it in local community settings. Through experiential education, they learn how to identify problems as well as how to collaborate with government and civic groups in formulating and implementing solutions. Students become active participants in the democratic process rather than simply passive observers.⁵ Outdoor education and experiential education fuse in many creative and successful ways; one example is secondary school interdisciplinary OEE programs. These four-credit, semester-long programs give students the opportunity to draw meaningful connections between their studies and their communities as they visit waste disposal facilities, harvest maple syrup, and create and tend to gardens.

**Information alone can never
become knowledge and knowledge
never becomes wisdom without some
kind of rooting in the good
soil of experience.⁶**

James Raffan



EDUCATION for CURRICULUM and COMMUNITY

Connecting OEE and Place-Based Education

Students, teachers and researchers have stressed that learning is more meaningful and effective when students can draw connections between their studies and the world around them. A model for achieving this – place-based education – is growing in popularity and its positive results are striking. Place-based education involves tapping into the local community and environment to teach numerous curriculum subjects. This helps students connect to their communities and establish a stronger commitment to being active and engaged citizens; it also enhances their concern for the environment.

Together, OEE and place-based education relate curricula to real-life situations and the complexities of our natural surroundings. Proponents of place-based education often envision a role for OEE in achieving local ecological and cultural sustainability.⁷ David Sobel, Project Director of the Center for Place-based Education at Antioch New England Institute, has been particularly instrumental in the development of place-based education, highlighting how this approach to learning within local settings strengthens community bonds, participants' appreciation for the natural world, and a commitment to citizen engagement.⁸ Sharing the same line of thinking as Sobel, Richard Louv laments: "Lacking direct experience with nature, children begin to associate it with fear and apocalypse, not joy and wonder. . . . Children learn about the rain forest, but usually not about their own region's forests, or, as Sobel puts it, 'even just the meadow outside the classroom door.'"⁹ Environmental educator and writer David Orr has issued a call for "ecoliteracy." He presents principles for rethinking education that clearly relate place-based education to outdoor education: "(1) students should understand the effects of this knowledge on real people and their communities; and (2) learning through direct experiences outside the classroom is as important as the content of particular courses."¹⁰ Place-based educators believe that "education should prepare people to live and work to sustain the cultural and ecological integrity of the places they inhabit. To do this, people must have knowledge of ecological patterns, systems of causation, and the long-term effects of human actions on those patterns."¹¹

OEE programs that integrate the philosophy of place-based education have reported impressive outcomes. Lieberman and Hoody's 1998 California State Education and Environment Roundtable (SEER) study, *Closing the Achievement Gap*, looked at 150 schools in 16 American states – all of which were using the local environment as a comprehensive focus and framework for education. They observed that, compared to non-OEE students, children immersed in these OEE programs had increased engagement and enthusiasm for learning in many curriculum subjects.¹² As one example, students' proficiency in developing and applying language arts skills was heightened: "They like reading about nature and their community; they enjoy writing about issues affecting society; and they welcome the chance to express their ideas at public meetings and in presentations."¹³

Enjoyment and deeper understanding are hallmarks of place-based OEE. While being encouraged to use problem solving skills, children in these programs are also better able to synthesize information and think strategically.¹⁴ Lieberman and Hoody observed in social studies: "It appears that students better understand the complex interrelationships and connections among individuals, communities and society when they have the chance to apply their social studies knowledge in real-world settings. At the same time, they develop a deeper, contextual understanding of history, geography and political systems."¹⁵

These findings certainly support COEO's claim that OEE broadens and deepens the knowledge base of all subject areas, and that it can do so in integrated ways. *Closing the Achievement Gap* also reported exciting results for math. Rather than approaching the subject abstractly, students learn that math skills are a tool to analyze connections in real-life situations. The research revealed that "learning in the context of their local community fosters a deeper understanding of math and enables students to more readily master crucial skills."¹⁶ Students are also better equipped to make connections to other disciplines, helping them interpret discoveries in geography, science, and economics.¹⁷

Lieberman and Hoody noted that the deeper connections experienced by students in their study led to greater pride and ownership in accomplishments.¹⁸ This pride

Overlapping Attributes of OEE and Place-Based Education

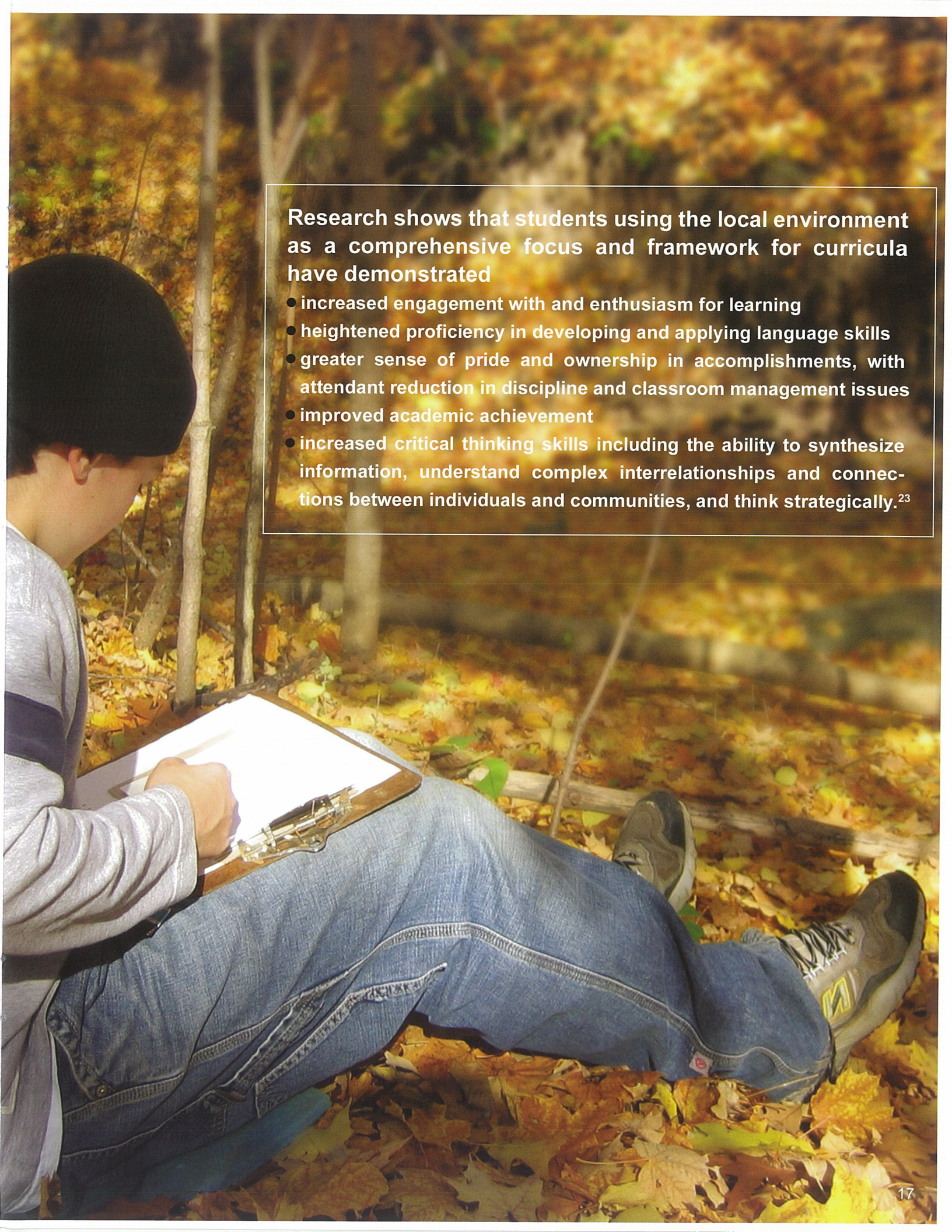
Attributes	OEE	Place-Based Education
Uses students' whole environment as a source of knowledge	X	X
Uses the local community and local environment to teach numerous curricula	X	X
Uses the outdoors – both natural and human made – to promote learning from direct experience	X	X
Encourages students to make links between their studies, real people, and their communities	X	X
Includes a wide variety of locations, from local community to remote centres and wilderness settings	X	
Focuses on education for character and wellbeing, as well as education for environment and curriculum / community	X	

seems to positively affect children's behaviour as reduced discipline and classroom management difficulties are a frequent outcome of place-based OEE.¹⁹ Improved behaviour and attendance have a noteworthy effect on teacher-student dynamics, as observed by Little Falls High School in Little Falls, Minnesota. This participant school in the SEER study reported that students in their place-based curriculum had 54 per cent fewer suspensions than other ninth-graders throughout the state. At another Minnesota elementary school, teachers made 560 disciplinary referrals to the principal's office in a single year. Two years later, when the OEE program kicked into gear, the number dropped to 50. Both the principal and teachers believe that students' increased engagement in learning is responsible for these decreases in behavioural problems.²⁰

These results are encouraging, but they do not stop here. Findings from multiple studies reveal that academic achievement improves when children are involved in comprehensive OEE. Four major studies performed in the last seven years have determined that students in schools using OEE consistently score higher on standardized tests than students in schools without OEE.²¹ One of these studies also found that grade point averages were higher among students immersed in OEE programs.²²

Place-based OEE fosters a comprehensive understanding of the world, and trained outdoor educators can support classroom teachers in developing customized programs tailored to local environments. However, policies are needed that recognize the necessity of outdoor educators in this process. Once these expectations are in place, teachers and outdoor educators can begin to work together to provide relevant, hands-on experiences to students, and then witness the wide array of benefits that flow from this synergy.



A photograph of a student sitting on the ground in a forest, surrounded by fallen autumn leaves. The student is wearing a grey long-sleeved shirt, blue jeans, and sneakers. They are holding a clipboard with a white sheet of paper and a pen, appearing to be taking notes. The background shows trees and more fallen leaves, creating a warm, autumnal atmosphere.

Research shows that students using the local environment as a comprehensive focus and framework for curricula have demonstrated

- increased engagement with and enthusiasm for learning
- heightened proficiency in developing and applying language skills
- greater sense of pride and ownership in accomplishments, with attendant reduction in discipline and classroom management issues
- improved academic achievement
- increased critical thinking skills including the ability to synthesize information, understand complex interrelationships and connections between individuals and communities, and think strategically.²³

When I taught the kids math skills like measuring in the classroom, they forgot it and couldn't make use of it. When the students had a chance to use these skills on our nature trail, they not only learned better, but could apply and remember their math skills longer.²⁴

Kim Flynn, math teacher involved in SEER study,
Closing the Achievement Gap

Improved student learning through OEE

The West Valley Outdoor Learning Centre in Spokane, Washington turns students from seven school districts into natural history experts by integrating 3 Rs (reduce, reduce, recycle) programs into their everyday lives. Tom Moore, founder and director of the four-year-old program that serves 3,000 kids each year, speaks to the intense value of combining scientific inquiry and resource stewardship with OEE: "Kids learn best when their learning is based on personal experience. We humans are hard-wired to connect with nature, so [West Valley Outdoor Learning Centre] kids go outdoors and really get to know our wildlife and landscape. That connection improves student learning overall."²⁵

MYTH BUSTER: “Stranger-Danger”

A fear of what lies in dark corners lingers in the minds of many parents, teachers and children. A 2004 British study reported that young children carry a daily anxiety about being kidnapped by a stranger, sexually abused by a paedophile, or victimized by terrorism – a fear that is magnified by parents’ alarm about “modern folk tales.”²⁶ Research shows that the rampant fear of strangers is largely unfounded. The most accurate and comprehensive study on this subject, the “National Incidence Study of Missing, Abducted, Runaway and Thrownaway Children in America,” conducted by David Finkelhor of the Family Research Laboratory at the University of New Hampshire and the American Justice Department, revealed, as quoted in Louv, “most abductors weren’t strangers, but family members or someone the family knew.”²⁷ Today, Finkelhor characterizes the stranger-snatcher epidemic as “an ‘optical illusion’ caused by generalized social anxiety, new coordination between law enforcement and the missing-children groups, and media excitability.”²⁸

It has been suggested that the real danger in perpetuating this myth is that our children are not given the opportunity to develop important life skills through learning and playing outdoors. Di McNeish, Director of Policy and Research at Barnardo’s (the leading UK children’s charity) says that this is “leading to a poverty of opportunity for today’s youngsters, creating scared children who will grow into timid adults. They are not getting the chance to develop the independence they need to become fully grown-up adults able to successfully and boldly navigate the real world.”²⁹ The Canada Safety Council agrees, warning that, “the stranger-danger message can hinder children from developing the social skills and judgement needed to deal effectively with real-life situations.”³⁰

Parents and teachers can receive support from outdoor educators to reverse the subjective popular opinion that the outside world is a dangerous place. They can do this by giving children who have timid views of the natural world the opportunity to develop important life skills in a variety of safe OEE situations, and by simply encouraging them to be active outdoors.

OEE in ACTION:

Connecting through Place-Based Education

Evidence is mounting in support of connecting children with their local environments. Multiple research studies confirm that repeated visits to a natural place using different ways of knowing (e.g., historical, scientific, ecological, artistic) are influential in deepening connections with the environment.³¹ Teaching children about the positive aspects of their local environment also builds a sense of caring and connection to their local communities.³²

Researchers have found students learn best from problems that arise from their own lives and that they can solve themselves.³³ When children are given the opportunity to address environmental issues in their own neighbourhoods, they can develop a sense of ownership and empowerment.³⁴ Outdoor education programs should include activities that students perceive as having real consequences.³⁵ Activities that have limited realistic opportunities for students to follow up are seen by participants to have minimal transfer and longevity of any learning.³⁶

OEE nurtures children's connectedness with nature and the wider community. This has been cited by multiple studies, with Elaina Loveland's research into Alaskan schools contributing a wealth of positive feedback for OEE.³⁷ Alaska has implemented a unique OEE program – the Alaska Rural Systemic Initiative (AKRSI) – which integrates local indigenous knowledge by offering students the opportunity to spend two weeks visiting Aboriginal subsistence camps where they learn about hunting, fishing, medicinal plants and beaver habitat. Students use digital cameras and laptop computers to document their learning and create Web pages, becoming storytellers to the global community. The curriculum transfers smoothly to the classroom where the students read and write about local history.

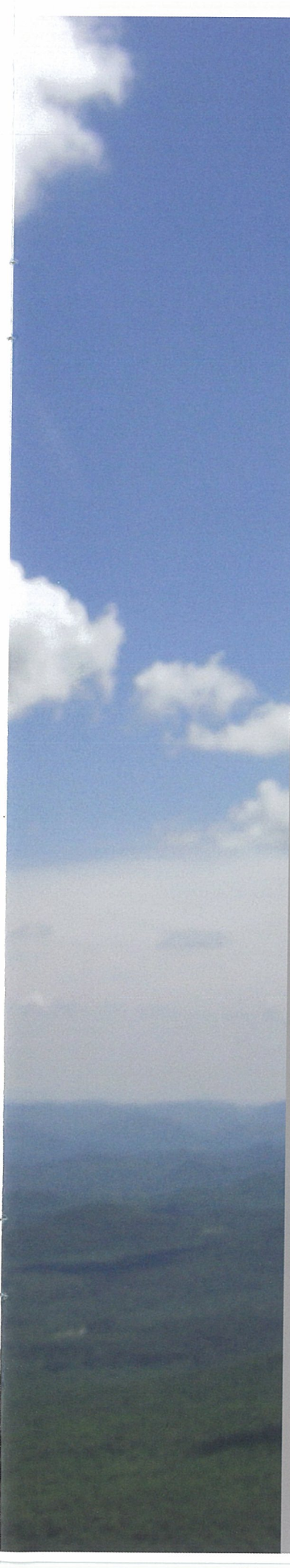
Three years ago, prior to the launching of AKRSI, Loveland found that one Alaskan school had the lowest test scores in its district and one-third of its students between the ages of 12 and 16 were not attending school. After implementing AKRSI, the school now has every school-age child in its area attending classes and test scores have dramatically risen.³⁸ Students participating in AKRSI are exposed to a variety of place-based education projects that are significantly improving their academic performance. AKRSI district schools now have 24 per cent of their students performing in the upper quartile of the CAT-5 math test.





OEE in ACTION: Outdoor Education Centres





OEE is a distinctive methodology carried out through the implementation of safe and effective programs by experienced outdoor educators. Traditionally, OEE programs have been implemented at outdoor education centres that are board, agency or privately owned. Financial constraints and a “back to the basics” movement have led to many of these centres being closed over the past couple of decades, with the remaining ones in constant jeopardy. Ironically, this is happening at a time when our children desperately need to be re-engaged with their natural surroundings.

Researchers are concerned that an overdriven focus on testing children detracts from giving them total life experiences and developing them as a whole.³⁹ Government-funded OEE programs are invaluable in that they ensure equity of access for all students and they function outside the limitations that govern traditional teaching and learning in schools. They promote the development of the whole person as a social and individual being in a balanced and integrated approach.⁴⁰

Researchers observe that the outdoor environment is too frequently neglected by teachers, curriculum developers and academics.⁴¹ There have been several studies documenting that teachers tend to avoid outdoor activities because they are frequently unfamiliar with the philosophy, technique and organization of using the outdoors as an effective medium for teaching.⁴² Realizing that teachers face restrictions of time, resources and support, they should not be expected to be the sole facilitator of OEE for students. Trained educators at outdoor education centres are key to providing the well-rounded education that children deserve. Support should also be put in place for the additional training of classroom teachers to take their students outdoors locally.

Outdoor education centres have the following potential assets:

- A property that offers a variety of terrain and natural surroundings where year-round programming can be safely and effectively offered.
- A location for field equipment and resources.
- Well-trained staff who are familiar with what the centre has to offer.
- An OEE professional development capacity for both field centre staff and visiting teachers.
- The potential to foster long-term relationships between field centre staff and visiting teachers.



EDUCATION for WELLBEING

Outdoor education promotes lifelong physical, emotional and spiritual wellbeing

While more research is needed, a growing body of studies suggests that

- contact with nature is as important to children as good nutrition and adequate sleep; there are also well-reasoned theoretical arguments that suggest humans in general – and therefore children – have an inborn need for contact with nature⁴³
- exposure to green space reduces crime and increases individuals' wellbeing and ability to focus⁴⁴
- time spent outdoors more strongly correlates with increased physical activity and fitness in children than do other environmental determinants⁴⁵
- a powerful strategy to counteract the childhood fitness crisis is to create attractive outdoor, green environments that encourage children to spend longer periods of time outside, engaged in higher levels of physical activity in fresh air and sunlight⁴⁶
- children as young as five have shown a significant reduction in the symptoms of Attention Deficit Disorder when they are engaged in outdoor activities in natural settings, including wilderness backpacking, gardening, restoring ecosystems, and simply walking through green areas.⁴⁷ Outdoor activities with an environmental focus have been found to reduce the symptoms of this disorder more effectively than the same activities conducted in indoor settings. Interestingly, findings were consistent across age, gender, income, community types, geographic regions and diagnosis.⁴⁸

The Link Between OEE and Physical Wellbeing

Childhood obesity is becoming an increasingly serious problem in Western countries including Canada. A recent study by the Ontario Medical Association revealed that, over the past 25 years, obesity rates have more than tripled for Canadian children between the ages of 12 and 17.⁴⁹ The study claims that the health consequences are severe and potentially life threatening – increased risk of heart disease, Type 2 diabetes, orthopaedic complications, breathing problems like obstructive sleep apnea, and high blood pressure. Doctors are now warning that children may not outlive their parents due to weight-related health issues.⁵⁰

Ontario doctors are sounding alarms: “This epidemic of paediatric obesity may become the most important and devastating public health challenge of the 21st century,” claims Brian McCrindle, a cardiologist at the Hospital for Sick Children. “The steady rise in childhood obesity, which is outpacing adult obesity, can be linked to lifestyle changes that see kids sitting at computers and not playing outside, consuming larger portions of food, and eating processed food high in trans fat and sugar.”⁵¹ If we have the power to educate children about the benefits of healthy eating habits, we can also help to reverse this epidemic by sparking enthusiasm in physical activity – both indoors and outdoors.

According to the Canadian Association for Health, Physical Education, Recreation and Dance (CAHPERD), only 20 per cent of Canadian children receive daily physical education at school.⁵² While some parents may enrol their children in extracurricular sports, this is not always an option for less affluent families. Health advocates decry the extremely limited options available to children who simply want to play outside.⁵³ Part of this is due to the expansion of cities into areas where children used to roam, such as vacant lots, fields and wooded areas. Another trend has been the transformation of schoolyards and parks from places with ‘wild’ areas like ponds, boulders, stumps, branches, trees and gardens to spaces featuring rubberized play surfaces, lowered play equipment and limited opportunity for children to creatively manipulate their surroundings. It should not surprise us, critics assert, that children turn to television and computers for entertainment.⁵⁴



“Significantly reducing the amount of television children watch would be an important first step in attempts to tackle the current epidemic of childhood obesity,” says Bob Hancox, co-author of a study published in the September 2005 issue of the *International Journal of Obesity*.⁵⁵ Across Canada, movements encouraging children to engage in outdoor activities are breaking television’s hypnotic spell. Acting on a desire for children to reap the benefits of unstructured play, Canadian rowing champion Silken Laumann offers resources to ‘community champions’ who have a desire to reinvigorate children with physical activity, including unstructured outdoor play. Laumann urges other concerned adults to join her mission:

I want to live in a community where children play in the park and walk to school with their friends; a community where children imagine the ravine as the secret headquarters for the good guys; I want them to lose themselves, hose in hand, creating a big mud puddle in the backyard, then hear them splash and scream with laughter as they run through it. I want to meet other parents at the park to share a laugh or lend an ear while our kids are dreaming up adventures. I want to help create that community.⁵⁶

Laumann’s efforts are a great start to alleviating the childhood obesity epidemic and bringing communities into direct contact with nature. However, government action must also be taken to make such initiatives more widespread.

The Ontario government has taken positive steps to reinvigorate children by adding 20 minutes of daily physical activity to the elementary public school curriculum. Critics claim, however, that this addition is ineffective because many teachers lack formal training and, in some cases, gymnasiums.⁵⁷ The beauty of OEE is that, with teacher in-service, physical activity can easily be integrated into engaging, age-appropriate and curriculum-linked outdoor activities in schoolyards and local parks. These activities can include Inuit and other native games, wildlife simulation games (e.g., Project WILD),⁵⁸ and a wide variety of team-building exercises. Moreover, research has shown that time spent outdoors more strongly correlates with increased physical activity and fitness in children than do other environmental determinants.⁵⁹

Robin C. Moore, Professor of Landscape Architecture at North Carolina State University and Director of the Natural Learning Initiative, claims: “Prior to

adolescence, children relate to the world through their senses and bodily movement, which is strongly motivated by the diversity and freedom of outdoor environments."⁶⁰ He points to studies by Frances E. Kuo and William C. Sullivan, Patricia Wells, and Mary S. Rivkin, which find that,

This is especially true of the 'close-by nature' green environments of everyday life. These new and important empirical research findings suggest a powerful strategy to counteract the childhood fitness crisis by creating outdoor, green environments that are so attractive that children will spend longer periods of time outside, engaged in higher levels of physical activity in the fresh air and sunlight.

These studies make a compelling case for the great value of OEE as a viable solution in reinvigorating children through physical activity.

University of Toronto professor Margaret MacNeill highlights the need to frame the notion of activity positively. On the issue of obesity, MacNeill suggests that exercise needs to be perceived as fun instead of a form of punishment.⁶¹ With guidance from trained outdoor educators, classroom teachers can combine curricula with outdoor activities that are personally fulfilling and environmentally sustainable, tackling the childhood obesity epidemic head on. This includes pursuits such as hiking, camping, cross-country orienteering, cross-country skiing and snowshoeing.

CROSS-COUNTRY ORIENTEERING:

An Exciting Challenge for Body and Mind

Imagine running through a southern Ontario woodland on a fine spring day, searching for an orange and white marker located in a small depression on the western edge of a long, narrow marshland. You head along the top of a trillium-laden valley, keeping an eye on the river that flows towards your destination. You constantly refer to the map and compass in your hand. As you reach a clearing, you know it's very close. Another 25 metres to the south, past the bulrushes and cattails of the marsh, and then ... bull's-eye! There it is! Quickly, you punch in your control card and then head off to the next marker. This is orienteering.

In a little over 100 years, orienteering has evolved from a specialized exercise for Swedish military messengers to an international sport. Found in close to 40 countries, orienteering holds the record for the world's largest single sport event. (One year, participation in "O-Ringen," a five-day event held annually in Sweden, reached an all-time high of 26,000 competitors.) The sport's best competitors are considered elite athletes; they not only possess the speed and endurance of top cross-country runners, but they must also apply their thinking skills to advanced map reading and complex decision making. This is why the sport is often referred to as "cunning running" or "adventure running."

However, orienteering attracts more than the serious athlete. Many others participate in the sport because of its unique combination of mental and physical fitness. It is considered a "lifetime sport" because it offers several different levels of course length and difficulty so as to accommodate participants of varying age and ability. People also choose to participate in order to travel through and enjoy a piece of unfamiliar countryside without getting lost.

While I have personally enjoyed the competitive end of orienteering, I always remember fellow outdoor educator Phyllis Hill. She usually walked her course and she would return, relaxed and smiling, when the awards were being given out. She was the one with stories about encountering a fox or deer, or stopping to enjoy a great view overlooking a river valley. When I teach orienteering, I always mention both approaches to the sport, and I ensure that there is enough time for both walkers and runners. I also put the students in pairs for reasons of both teamwork and safety. For younger participants, I refer to the sport as "joggin' with your noggin." At the end of the event, my students are usually engaged in animated conversation, asking each other about what route they chose to go from one control to another, or what happened when they came to a certain very steep hill. It is one of the most popular outdoor activities we offer at our outdoor centre.

Grant Linney

**Prior to adolescence, children relate
to the world through their senses
and bodily movement, which is
strongly motivated by the diversity
and freedom of outdoor
environments.**

Robin C. Moore

The Link Between Contact with Nature and Emotional/Spiritual Wellbeing



While more research is needed, a growing body of studies suggests that contact with nature is as important to children as good nutrition and adequate sleep.⁶² Based on their research, Frances Kuo and Andrea Faber Taylor claim “there are also well-reasoned theoretical arguments as to why humans in general – and therefore children – might have an inborn need for contact with nature.”⁶³ However, when children are outdoors today, this contact may be interrupted by a variety of factors including new technologies such as iPods and cell phones.

Researchers for a 2006 study published in the *Journal of Environmental Management* state that we are increasingly subject to “videophilia – the new human tendency to focus on sedentary activities involving electronic media.”⁶⁴ They found that the decline in per capita visits to US national parks since 1988 is significantly correlated with increased time spent watching television and home movies, playing video games, going to the theatre, and using the Internet.

Accompanying this trend, the number of children taking antidepressants and Attention Deficit/Hyperactivity



Disorder drugs has skyrocketed in recent years. Specifically, there has been a 49 per cent rise in the use of Attention Deficit/Hyperactivity Disorder drugs by American children younger than five in the past three years.⁶⁵

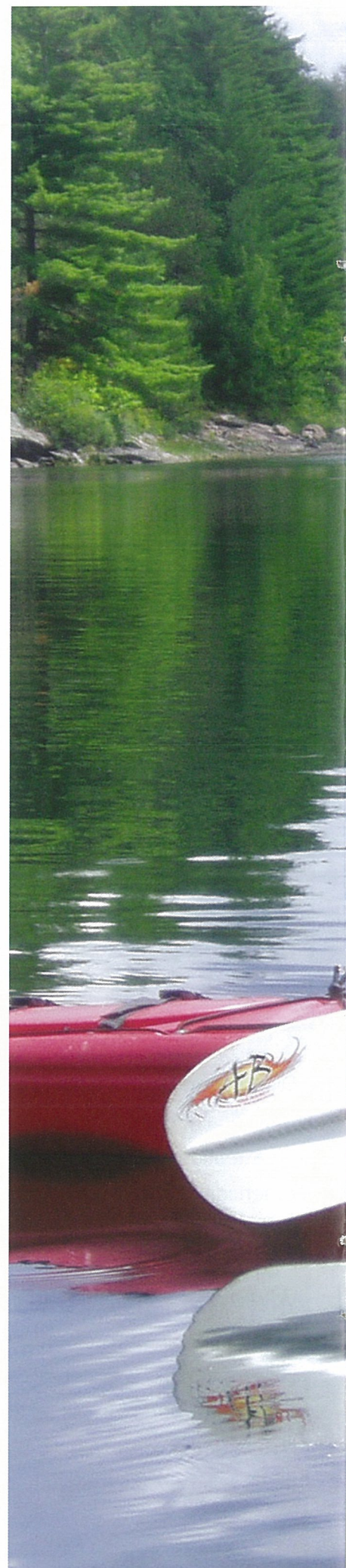
Writer and columnist Richard Louv believes the escalation in the disorders associated with such prescriptions is a result of children disconnecting from the natural world. In his book, *Last Child in the Woods*, he coins the term “nature-deficit disorder” to describe the human costs of alienation from nature: “diminished

use of the senses, attention difficulties, and higher rates of physical and emotional illnesses.”⁶⁶ He notes that the disorder can be detected in individuals, families and entire communities. This claim is corroborated by the work of Kuo and Faber Taylor at the University of Illinois at Urbana-Champaign. Their exhaustive study identifies that exposure to green space reduces crime and increases individuals’ wellbeing as well as ability to focus.⁶⁷

Perhaps our fixation on solving problems with medications has gone too far, especially when

alternatives exist. Kuo and Faber Taylor found that children as young as five show a significant reduction in the symptoms of Attention Deficit Disorder when they are engaged in outdoor activities in natural settings, including wilderness backpacking, gardening, restoring ecosystems, and simply walking through green areas.⁶⁸ Their research, published in the *American Journal of Public Health* in 2004, found that outdoor activities with an environmental focus reduced the symptoms of this disorder more effectively than activities conducted in indoor settings. Interestingly, findings were consistent across age, gender, income, community types, geographic regions and diagnosis.⁶⁹

In a number of studies, researchers suggest that OEE programs, especially those with an adventure focus, enhance psychological wellbeing. A synthesis of 96 research studies on outdoor adventure programs performed in 1997 found that research into redirection and rehabilitation of students at risk has continued to identify adventure programs as “promising alternatives to traditional justice interventions. . . . After taking 30 delinquents on a 30-day wilderness course, researchers concluded that successful completion of the program resulted in reductions in arrest that began immediately and lasted for about one year.”⁷⁰ The researchers also found trends that included improved independence, confidence, self-efficacy, self-understanding, assertiveness and decision making – character traits that had a positive effect on participants’ physical and emotional wellbeing.





OEE in ACTION:

Place-Based Education in Secondary Schools and their Surrounding Communities

Secondary school Interdisciplinary Studies (IDS) OEE programs are another dynamic expression of place-based learning. Across Ontario, visionary teachers are developing and running successful IDS OEE programs. Most programs are four courses in one semester, giving students the opportunity to combine classroom learning with hands-on experience outdoors. Mike Elrick has designed two programs for Guelph, Ontario students in grades 10 (the Community Environmental Leadership Program – CELP), and 12 (Headwaters). The semester-long courses have students learn and work at a nearby rented summer camp. Each course explores a central theme and integrates four academic disciplines to enhance the depth of inquiry and investigation. CELP's central theme is helping students to develop a relationship with the natural world through creating a vegetable garden, sewing their own mukluks for a winter camping excursion, making maple syrup, shelters and paddles, teaching grade 5 students the "Earthkeepers" program,⁷¹ and visiting a waste disposal plant, an abattoir and debates in the city chambers. The programs are rich in creating opportunities for kids to connect with nature, themselves and others.

Mark Severn has also developed an IDS OEE program at Nantyr Shores in Innisfil, Ontario: "It's the most rewarding program to teach," he comments, "because you bring outdoor activities to high school students who wouldn't otherwise be picking up these activities due to economic, social or cultural barriers. As soon as you're in the great outdoors, you're no longer cool because the setting brings people to a common level. You learn more about kids sitting around a campfire than being in a classroom."⁷²

Teachers of integrated OEE programs have stressed that if you really want to make a difference to students, you have to show them that you are human by being interactive. "It's easy to appear more human when you haven't had a shower," claims Severn. Educators have also commented on the self-satisfaction that can be gained from integrating outdoor education into the curriculum. Teaching static electricity while rock climbing or canoe tripping can be far more rewarding than teaching it in the classroom.

IDS OEE programs closely mirror the highly successful education model studied by Lieberman and Hoody's *Closing the Achievement Gap*. The EIC (environment as an integrating context) model is a system of educational practices developed by the State Education and Environment Roundtable in California. EIC improves student achievement by using local natural and community surroundings as a context for learning. The emphasis of EIC is problem solving, project-based activities and team teaching, with a high level of collaboration between students and teachers. Students work together and develop lifelong interpersonal skills, increased understanding of others, a sense of community and an enhanced understanding of their place in the world.⁷³

The strong parallels between IDS OEE and EIC point to the need for more support of such programs being implemented in Ontario.

Research into EIC has demonstrated

- increased engagement with and enthusiasm for learning
- heightened proficiency in developing and applying language skills
- greater sense of pride and ownership in accomplishments (with attendant reduction in discipline and classroom management issues)
- improved academic achievement
- increased critical thinking skills including the ability to synthesize information, think strategically, and understand complex interrelationships and connections between individuals and communities.⁷⁴

If students are simply learning about issues but are not involved in some first-hand aspect of the issue (i.e., through practical experience), especially an aspect that seeks a solution, then they cannot fully understand the problem.⁷⁵

Noel Gough, Professor of Education at the University of Canberra, Australia



EDUCATION for CHARACTER

Outdoor Education provides opportunities for extensive personal and interpersonal growth

Cuts, insect bites and other minor outdoor occurrences are all a part of growing up. During this process we 'learn the ropes' and build character. Today, however, such experiences are increasingly absent. Children are over-scheduled and over-supervised, spending 90 per cent of their time indoors, partially due to overblown risk anxieties.⁷⁶ *Maclean's* magazine reports that "the radius of play of the average nine-year-old has shrunk to one-ninth of what it was in 1970."⁷⁷ The result of this is that kids run the risk of becoming automatons, ill-equipped to think or act for themselves. Studies are stating that "kids have become less capable, less self-reliant – essentially, more vulnerable to harm."⁷⁸

Nature is essential for healthy child development because it stimulates all the senses and seamlessly mixes informal play with formal learning. It is not playgrounds, but the more wild, alternative outdoor settings that offer children the greatest lessons of risk and challenge. In his book *Kinship to Mastery*, Stephen Kellert asserts that our current limited opportunities for outdoor free play in wild settings impact negatively on intellectual growth: "Human powers of creativity and imagination, as well as our emotional well-being, owe much to the non-manufactured world."⁷⁹ Outdoor educators have the knowledge and skills to make learning in wild, alternative outdoor settings an enriching experience that expands children's understanding of themselves and others.

The contexts, experiences and interactions of outdoor education provide opportunities for both personal and interpersonal growth. Research demonstrates that these opportunities are further enhanced during follow-up and debriefing periods with support materials from outdoor educators, pointing to the need for properly facilitated preparatory and follow-up phases to OEE experiences.⁸⁰

Personal Growth

Results from a range of OEE studies are compelling. Hattie et al.'s 1997 investigation of 96 studies reveals that OEE programs with an adventure element improve leadership, self-concept, independence, confidence and general problem solving competencies.⁸¹ In addition, short-term or immediate gains from outdoor education were followed by substantial additional gains between the end of the program and follow-up assessments.⁸² These gains include increased independence, confidence, self-efficacy and self-understanding.⁸³ Retention in behavioural and academic adjustment, as well as continued growth, were also noted among behaviourally disturbed children. These children exhibited these improvements as a consequence of follow-up work given by classroom teachers that consolidated their OEE experiences.⁸⁴ Accompanying these benefits was a reduction in aggression and neuroses.

According to data from a 2001 New Zealand study, learning through outdoor adventure improved participants' self-concept and also contributed to their "positive freedom," i.e., intrinsic motivation and capacity for self-determination.⁸⁵ Moreover, in programs where there is a focus on cognitive and physical/behavioural benefits with at-risk youth, outdoor adventure programs contribute to promotion of positive behaviour, reduced rates of re-offending, and

fitness.⁸⁶ Studies such as this, combined with a plethora of others, stand in support of OEE as an effective measure to reconnect children with themselves and enable them to participate as responsible citizens in society.

Seven other studies that looked at OEE programs without an adventure component produced similar findings, adding that OEE enhances decision-making skills and increases individuals' ability to overcome challenges.⁸⁷ In addition, many other studies revealed that, when immersed in OEE, children demonstrate increased assertiveness, emotional stability, achievement motivation and maturity.⁸⁸ Students themselves have also indicated to researchers that OEE programs often allowed them to reveal new sides of their personality.⁸⁹ Combined with interpersonal growth opportunities, hands-on learning in outdoor environments empowers children to develop an incredible array of positive character traits that help them become competent and responsible adults.



Interpersonal Growth

Cross-study analysis (i.e., an in-depth analysis of numerous studies) has shown that OEE adventure programs can be an integral component of students' interpersonal growth. This has been noted in the areas of social competence, teamwork skills, cooperation, flexibility and interpersonal communication.⁹⁰ Troubled youth have also demonstrated positive improvements after adventure therapy outdoor education experiences.⁹¹

While children have much to gain from this positive combination of personal character traits and interpersonal skills, educators, parents and community members also stand to benefit from the capable children that emerge from OEE programs. The level of agreement among researchers strengthens the position that OEE is an effective tool for developing future citizens who are caring, informed, able to work together and action oriented.

In support of OEE, other countries are already providing children with these experiences. In Finland, for example, children are immersed in engaging outdoor play and do not learn to read until they are seven; Finland is the world leader in literacy.⁹² In addition, State of the Environment Norway, an arm's-length government organization, recognizes the importance of engaging children in the outdoors:

Studies have shown that there are several reasons why it is important to give children opportunities for outdoor activities from an early age. They develop better physical skills, have more physical and mental energy, more self-confidence and are happier. Outdoor recreation can also help to prevent diseases that are related to modern lifestyles.⁹³

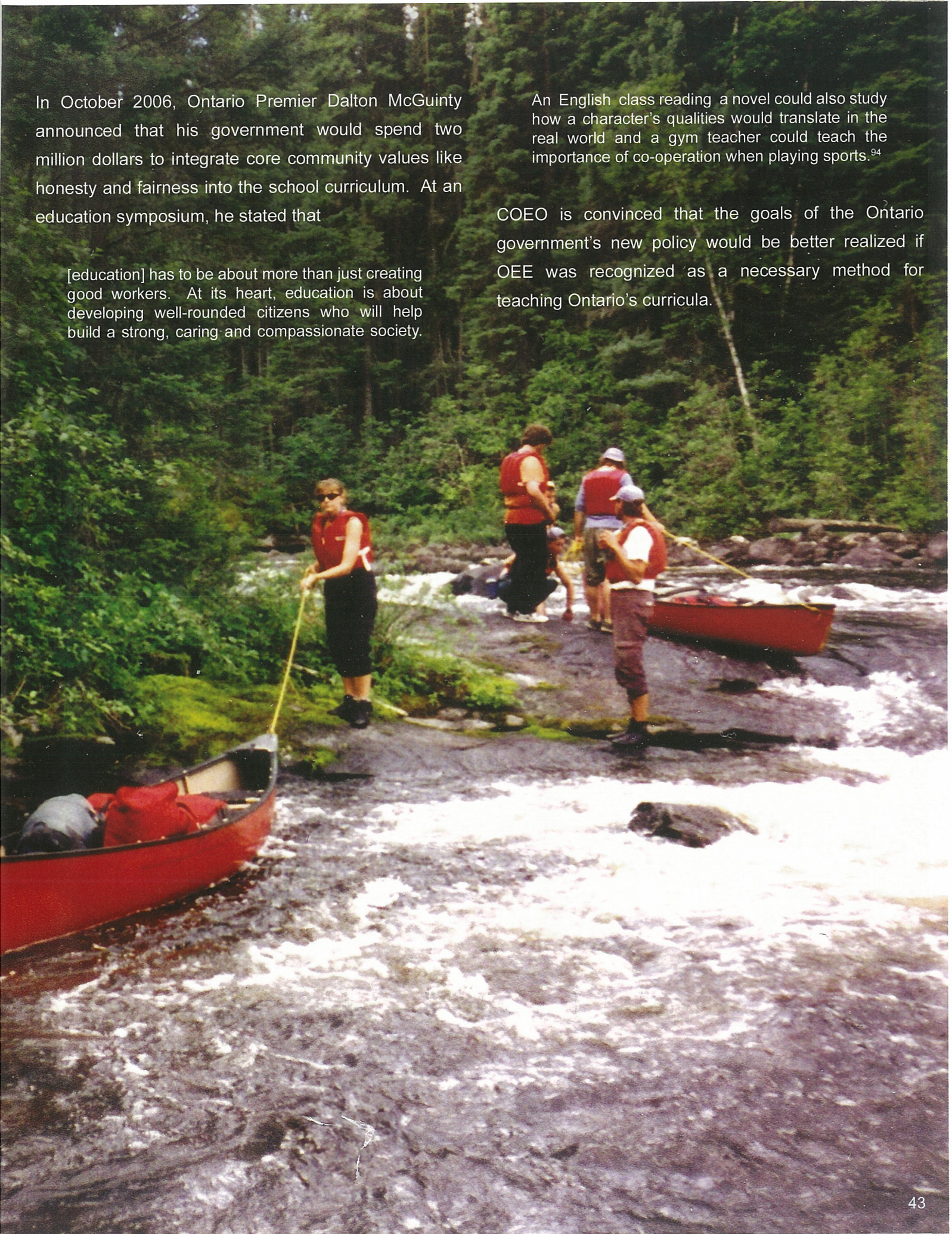


In October 2006, Ontario Premier Dalton McGuinty announced that his government would spend two million dollars to integrate core community values like honesty and fairness into the school curriculum. At an education symposium, he stated that

[education] has to be about more than just creating good workers. At its heart, education is about developing well-rounded citizens who will help build a strong, caring and compassionate society.

An English class reading a novel could also study how a character's qualities would translate in the real world and a gym teacher could teach the importance of co-operation when playing sports.⁹⁴

COEO is convinced that the goals of the Ontario government's new policy would be better realized if OEE was recognized as a necessary method for teaching Ontario's curricula.



A synthesis of 96 research studies on outdoor adventure programs performed in 1997 yielded these results:

- The following CHARACTER TRAITS are significantly enhanced as a result of OEE experiences, particularly when trained outdoor educators are involved in all aspects of the program, and the program includes a strong follow-up/reflection component: creativity, enthusiasm, self-motivation, self-understanding, assertiveness, maturity, independence and self-confidence.⁹⁵
- The following SOCIAL SKILLS are also enhanced through OEE experiences, particularly when trained outdoor educators are involved in all aspects of the program, and the program includes a strong follow-up/reflection component: cooperation, effective communication, decision making, problem solving, task leadership and social competence.⁹⁶
- Short-term or immediate gains from outdoor education have been followed by substantial additional gains in self-esteem between the end of the program and follow-up assessments. Examples of these gains include independence, confidence, self-efficacy, self-understanding and increased physical activity.⁹⁷
- Retention and continued growth are also notable among BEHAVIOURALLY DISTURBED children. These children also exhibit behaviour adjustment and academic improvement as a consequence of follow-up work given by classroom teachers that consolidates OEE experiences.⁹⁸
- The redirection and rehabilitation of AT-RISK YOUTH as a result of outdoor adventure programs point to these programs as promising alternatives to traditional justice interventions.⁹⁹

Research shows that

- children thrive physically, emotionally and academically when they are given the opportunity to experientially explore their limits in outdoor settings¹⁰⁰
- the limited opportunity for outdoor free play in wild settings impacts negatively on intellectual growth¹⁰¹
- OEE can help to prevent diseases that are related to modern lifestyles.¹⁰²

Personal traits developed through OEE



OEE in ACTION:

Student Perspectives on Adventure-Based Programs

The Australian Outdoor Education Centre, Camp Mallana, (about four hours' drive from Melbourne) is like many outdoor education centres in that it aims for its participants to develop skills and knowledge, improve social and teamwork skills, and build an appreciation and awareness of the environment. The program experience includes the development of aquatic-based skills and knowledge as well as a student-centred five-day expedition.



Skills, Knowledge and Recreation

- Outdoor education programs should include activities that students perceive as having real consequences.
- Student perception of risk increases effective learning during an outdoor education experience. When the students perceive there to be a challenge that involves some kind of risk, their level of engagement and enthusiasm increases.
- Students claim that greater responsibility and leadership given to them results in more effective learning.
- Activities that have limited realistic opportunities for students to follow up are seen by participants to have minimal transfer and longevity of any learning.¹¹⁸

Teamwork and Social Skills

- Outdoor education experiences that include a wide variety of group sizes and tasks increase the students' understanding of the different roles necessary in a functioning team. The students believe that there is a significant transfer of their social and teamwork learning back to the school environment. On returning to school, they felt they knew more about their classmates and had an increased understanding of how they were likely to respond to certain situations. They claimed that this helped them later on during class and group work activities.
- Programs that run early in the school year improve the opportunity for transfer of student socialization skills back to their classroom environment.
- Participants report the occurrence of bonding during outdoor education programs when groups are presented with and overcome challenges together.¹¹⁹

Two Australian researchers presented findings that illuminate, directly through the voices of the participants, student perceptions of their outdoor education experience. Students from a grade 10 class attending an eight-day OEE program were randomly selected and profiled. This was done via four sets of semi-structured interviews: during, late and post-program. The study is unique in that it explores whether students view the outdoor education experience as relevant to their education and development.¹¹⁷ An outline of their feedback is below:



Personal Development

- Camp Mallana provided students the opportunity to interact with their classmates in a new environment with less restrictive boundaries and expectations.
- Students perceived that outdoor education programs often allowed them to reveal new sides of their personality.
- Students felt that the leader-facilitated de-briefing process assisted them in consolidating the learning that occurred during the OEE experience.¹²⁰

OEE in ACTION:

Place-Based Education in Urban Settings

The Toronto District School Board (TDSB) is embracing place-based education in its outdoor education programming. The board's Toronto Urban Studies Centre (TUSC) specializes in delivering a field studies-style of OEE programming that engages children in Toronto's unique urban communities, helping them to establish a firm sense of place. TUSC's programs expose children to the unique cultural diversity that exists in different Toronto neighbourhoods, and allow technology-savvy students to complement field studies with the use of global positioning systems, information systems software, and digital cameras.

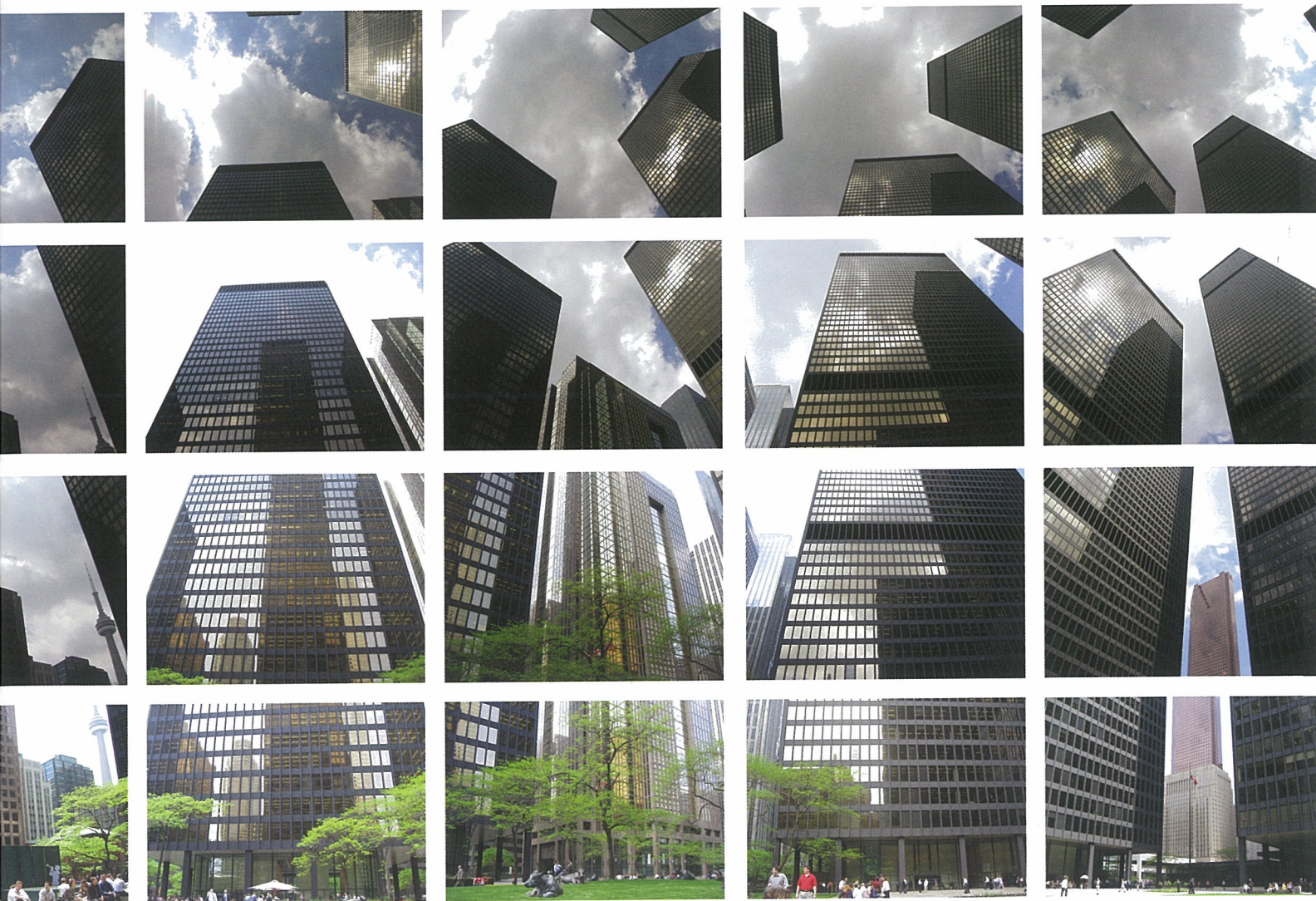
Lorraine Clarkson, TUSC Site Supervisor, is concerned with the level of local knowledge Toronto children, especially new Canadians, have when they visit TUSC: "Last week I had a group of Grade 7 students who did not know how to look at street signs on a corner and tell which street each sign related to. This comes from a lack of experience with relating to the world around them."¹²¹ She suggests that this is because the movement in their lives is from apartment to elevator to underground parking lot to school in their parent's vehicle. Without local knowledge and the ability to relate to what is around you, it is difficult for new Canadians (or any



urban dwellers) to establish a deep connection with their communities and the environment. TUSC engages kids in local history, geography and environments by taking them outdoors into their community settings and integrating sophisticated technology – a process that allows them to operate and produce at their own level.

“When kids use a language they’re familiar with and drawn to – technology – the connection is immediate and graphic,” Clarkson insists. “They have a product, a map that they have created, at the end of their time outdoors that can be used back in the classroom. Going

outdoors and using mapping techniques tells children a lot about a neighbourhood, and it enables them to use spatial thinking, focusing on connectedness, patterns and relationships.” The connectedness that students feel after spending a day out on program with the TUSC staff must be kept alive by longer, more sustained visits. Only so much can be achieved within the space of a day, and children who are unfamiliar with their new surroundings have so much to gain from the stimulating teachings at outdoor centres like TUSC.



OEE in ACTION: School Ground Greening

Naturalized schoolyards hold great potential for children to connect curricula to local environments. In an effort to enrich these experiences, Evergreen, a Canadian non-profit organization, developed "Learning Grounds," a school ground naturalization program that offers resources and support to schools across the country. With the help of Evergreen's staff, schoolyards are starting to change shape. Asphalt and barren spaces are being transformed into wild spaces housing trees, ponds, butterfly gardens, logs and vegetable gardens.

These changes, which promote imagination and creativity, come at a time when they are greatly needed, as noted by the editors of *Green Teacher* magazine, Tim Grant and Gail Littlejohn:

The traditional design of school grounds has rarely been questioned. There is now mounting evidence that the typical schoolyard design, emphasizing surveillance and team sports, exacerbates discipline problems, promotes aggressive behaviour, and renders these places, in which children pass a considerable amount of time growing up, miserable and inadequate.¹²²

In support of this statement, a study sponsored this year by the Public Health Agency of Canada found that, of 59 elementary schools that had recently naturalized their school yards, 83 per cent reported more social play and 81 per cent more civil behaviour among students.¹²³

In *Gaining Ground*, Janet Dymont reports the results of an Evergreen-commissioned 2003 study on the influence and potential of green school grounds in the Toronto District School Board (TDSB). According to research, students demonstrated more positive social behaviour when learning and playing on green school grounds.¹²⁴ A wide variety of additional benefits were perceived by participants, regardless of differences among the schools studied:

- Greening school grounds enhanced student learning.
- The diversity of play spaces suited a wider array of students than did conventional turf and asphalt school grounds.
- Green school grounds promoted the social inclusion of all people, irrespective of gender, race, class or intellectual ability.

- Green school grounds were safer and healthier spaces for students than were conventional school grounds.
- Green school grounds promoted environmental awareness and stewardship.¹²⁵

Students are not the only beneficiaries of naturalized schoolyards; teachers demonstrate renewed enthusiasm for teaching and use a wide variety of innovative instructional strategies in a broad range of subjects on green school grounds. Their testimonials are encouraging: "When I'm teaching outside, I feel excited again. . . . I realize that I still have a lot of passion for teaching."¹²⁶

For school ground greening to flourish, institutional support, curriculum development, teacher education and school board initiatives are crucial. Evergreen recommends that

- the Ontario Ministry of Education officially recognize, at the policy level, the educational, social and ecological benefits of hands-on, outdoor learning on green school grounds
- the policies developed by the Ontario Ministry of Education support and promote school ground greening initiatives by addressing issues related to funding, training and curriculum
- the Ontario Ministry of Education ensure that curriculum policy documents explicitly recognize the value of hands-on outdoor learning and provide concrete examples of how the curriculum can be delivered on school grounds
- faculties of education recognize the value of hands-on learning and provide professional development opportunities for student teachers and practicing teachers who wish to engage in greening initiatives and make full use of the educational potential of school grounds
- the TDSB continue to expand planning and design support for green school grounds to ensure that master plan designs and school-initiated projects incorporate practical, sustainable and engaging design elements as well as long-term maintenance plans. School boards across the province should follow this lead.



EDUCATION for ENVIRONMENT

Exposure to nature increases environmental stewardship

Researchers agree:

- Early, sequenced and repeated experiences in the outdoors develop a kinship with nature that can evolve into an informed, proactive and lifelong stewardship of our natural environment.¹²⁷
- Time spent outdoors in nature has been identified most often by participants in several international studies as the most significant factor contributing to adult concerns about the environment.¹²⁸
- Environmental responsibility is best developed outdoors. Involvement in outdoor activities stimulates interest in the outdoors, which in turn motivates students to learn about the natural environment.¹²⁹
- There are great benefits to the use of outdoor education methodologies for environmental education purposes.¹³⁰
- Case studies, field trips, community inventory projects and community action projects are the most effective instructional strategies for developing environmental responsibility.¹³¹
- Minimum impact practices and proactive clean-up activities increase students' awareness and appreciation of the environment.¹³²
- Children love to be part of the solution – especially when they are able to see the effects of their positive interaction with nature first-hand.¹³³

Serious and far-reaching human impacts on the natural environment are now evident on numerous fronts: global pollution, resource depletion, toxic wastes, widespread species extinction, and the recently projected loss of the world's fish stocks by 2048.¹³⁴ In addition, scientists around the globe are in agreement that climate change is not only a reality, but the alarming pace at which the Earth is warming is a result of human activity and our escalation of carbon emissions. The evidence is staggering: receding glaciers, rising sea levels, increasing temperatures, and more extreme weather events. Scientists warn that, if we do not act now to reduce carbon emissions, the consequences could be catastrophic. Even politicians are now sounding alarms.

Demonstrating international leadership, British Prime Minister Tony Blair has declared that the world is facing "nothing more serious, more urgent, or more demanding of leadership" than climate change, and that Britons must be prepared to pay now to avoid future disaster.¹³⁵ At the end of October 2006, he introduced a report by Sir Nicholas Stern, a senior government economist and former Chief Economist of the World Bank, warning that unabated climate change will devastate the world economy on a scale of the world wars and the Great Depression combined, costing the world between five and 20 per cent of global gross domestic product.¹³⁶ Blair called for "bold and decisive action" to cut carbon emissions and curtail the worst of the temperature rise. On a positive note, Stern stresses that acting now to cut greenhouse gas emissions would cost about one per cent of global GDP each year (\$7 trillion).¹³⁷ He reports that the action needed to curb the worst effects of climate change is manageable, and added: "We can grow and be green."¹³⁸ However, Stern goes on to say, "the science tells us that we have got 10 to 15 years to radically change the way in which we produce energy and fuel."¹³⁹ Reacting to Stern's report, Professor Neil Adger, an environmental economist at the Tyndall Centre for Climate Change Research in Britain, said: "The review shows that climate change is a moral policy issue where the countries of the world are completely interdependent but with different responsibilities for action."¹⁴⁰

OEE is an important part of the solution. Researchers have found that the first and essential step toward an increased understanding of environmental processes is engagement in outdoor activities. Many agree that exposure to nature leads to an increased understanding of our place in and dependence upon its intricate and elaborate workings; this, in turn, leads to increased environmental stewardship.¹⁴¹ Results from one study suggest that students immersed in OEE curriculum programs using environmental issue investigation and action training demonstrate significant changes in environmental behaviour and knowledge.¹⁴² This finding points to great benefits in the collaboration of environmental education (EE) and OEE.

In their landmark publication, *Greening the Way Ontario Learns*, Environmental Education Ontario (EEON) puts forth a strong claim for the necessity of establishing an ecologically literate public:

Within formal education, and across economic sectors and civil society, there is a need—and an expressed wish—to become both more knowledgeable and more skilled at making the decisions that will allow for continued prosperity within a framework of ecological sustainability. A national survey, conducted in 2002 by Environics International for EEON, revealed that only 4% of Canadians believed they knew enough to keep the environment healthy.¹⁴³

This staggering statistic has a clear message: education in ecological literacy must be stepped up if we are to give citizens the necessary tools to protect the environment. And, it is equally evident that ecological literacy cannot happen without hands-on direct experiences in the natural environment.

The good news is that children relish the opportunity to connect with and care for the natural world. Research suggests that, when given the opportunity to explore solutions to environmental problems, children embrace the challenge willingly – especially when they are able to see for themselves the effects of their positive interaction with nature.¹⁴⁴ This hands-on interaction takes place when children are given the opportunity to plant trees, grow culturally significant plants, create butterfly gardens, explore or clean-up local natural spots, develop school recycling and energy saving programs, or simply contemplate a connection with nature while

sitting under a tree with a journal. OEE researchers link this involvement in such hands-on minimal impact practices and pro-active clean-up activities to a significant and lasting increase in student awareness and appreciation of the environment.¹⁴⁵

A basic premise in youth education literature is that attitudes are acquired at a young age and may be carried into adulthood.¹⁴⁶ Multiple studies also find that the well-sequenced introduction of concepts and experiences with nature can be highly effective in promoting a kinship-like relationship with the environment.¹⁴⁷ It is also evident that environment-focussed OEE should begin at an early age and continue throughout youth in order to achieve ecological literacy.¹⁴⁸

An Environics poll conducted in 2002 found that "Canadians rate schools, including outdoor education, as the best source of environmental learning for young Canadians (59%)."¹⁴⁹ Provinces can work towards making this a reality by encouraging classroom teachers to collaborate with trained outdoor educators in the sharing of resources and expertise. This can be achieved through carefully planned pre-outdoor and follow-up activities. To this end, an Australian research study suggests that, during outdoor education programs, teachers and outdoor educators need to consider ways to make more direct links between the outdoors and the participants' school/home environments.¹⁵⁰ Children can then draw environmental connections between outdoor education experiences and their day-to-day lives.

Studies are emerging that also demonstrate a correlation between outdoor/environmental education and academic achievement. A state-sponsored study of 255 low-income fifth and sixth graders from Los Angeles, Fresno and San Diego, California who attended environmental study courses with an outdoor component observed that the experience boosted their science scores by 27 per cent as well as their self-esteem. The researchers also noted that the students, who attended weeklong nature courses in wooded settings, had a better understanding of science and environmental concerns than students outside the program.¹⁵¹



These are encouraging findings, but clearly not enough for the times in which we find ourselves. We must also take into account the insights of a variety of internationally renowned modern thinkers, such as those that follow.

Consider the message of Pulitzer Prize winner Jared Diamond in his book, *Collapse: How Societies Choose to Fail or Succeed*, as well as that of Ronald Wright in his 2004 Massey Lectures book, *A Short History of Progress*: they both describe how it has long been human habit to move to a certain location and to remain there until we have exhausted its resources and laid waste its landscape. And, they both note how we have now reached this absolutely critical point where our numbers, our technologies, and our voraciously consuming and wasteful ways mean that we can no longer move to some other unspoiled part of the world. As Thomas Homer-Dixon notes, “humanity can no longer escape from itself and its doings.”¹⁵² We are on the verge of an ecological bankruptcy from which there will be no return. We cannot dump these problems on to our children. Either we fundamentally and drastically change our ways – now – or we are very likely to perish.

So, OEE needs to be regarded as integral to an education system that must teach new ways of seeing and thinking and valuing. Outdoor educators are ideally positioned to provide children with powerful and lasting experiences that will help them to see life in dramatically new ways.

In her 2006 Massey Lectures book, *The Ethical Imagination: Journeys of the Human Spirit*, leading ethicist Margaret Somerville of McGill University notes that our children lack any sense of connection with the natural world that sustains us. She goes on to say that “young people . . . long to experience the wonder and awe of nature and we can help them to do so. It is not only a moral undertaking to do that, but also a moral necessity.”¹⁵³

In his book, *The Ingenuity Gap* (winner of the 2001 Governor General’s Award for Non-fiction), Thomas Homer-Dixon of the University of Toronto describes our staggering ignorance of how the natural world works and he recounts how we are making unprecedented changes to the most basic of Earth’s operating systems.

He speaks of “the loss of reference points beyond our human-created world,”¹⁵⁴ and how “we are losing the awe, the respect, and the recognition of mystery that remind us to be prudent.”¹⁵⁵ In a November 2001 letter to the Environmental Commissioner of Ontario, Homer-Dixon makes the following observation about the need for outdoor education: “I cannot comprehend how our provincial government fails to see the connection between the many pressing environmental issues of our times and the need to expose our children to publicly funded, teacher-led experiences in the outdoors. It is only through such direct and hands-on exposure that our children (and future citizens) will develop the ecological literacy and environmental ethic needed to sustain life on this planet.”¹⁵⁶

In a September 2006 statement, internationally renowned wildlife artist Robert Bateman claims: “The overwhelming reason to increase nature study and outdoor education in the schools is nothing short of the salvation of the planet. Almost all scientists and other thinking people say that we are headed in a very destructive direction with the desecration of our atmosphere and life on land and in our waters. . . . How can we expect to preserve and protect biodiversity if we don’t even know the names of the plants and animals that share our neighbourhood? And, what is worse, if we don’t care?”¹⁵⁷

And, finally, in an impassioned letter of support, David Suzuki, an articulate voice for science and the environment over many decades, covers similar ground concerning how we have lost connections with the life support systems of this planet that we simply cannot afford to lose. He concludes, “outdoor education is one of the most basic parts of education and ought to be a mandatory part of every curriculum in the country. It is not a frill or luxury; it is fundamental if we are to meet the real issues of our time.”¹⁵⁸

And so, the nature of our times dictates that every outdoor educator must educate for environment. Even if one’s primary goal rests in one of the other three values of OEE – curriculum and community, wellbeing or character – educators must constantly take every opportunity to connect our future citizens with the life support systems of this planet.

COEO believes that a key part of education for environment is an all-grades progression of carefully planned outdoor experiences. We must repeatedly bring our children into the experiential midst of their natural surroundings, and we must do so in new and dynamic ways. We must provide them with hands-on experiences that activate their curiosity and sense of wonder about their natural surroundings. We must provide them with compelling encounters with the complexities of natural systems so that their critical thinking skills are developed and they acquire a first-hand knowledge of the intricacies and interrelationships of ecosystems.

Ontario was once an international leader in outdoor and environmental education. Recent changes in curriculum and diminished access to funding not only hinder Ontario's ability to provide leadership in this area but also its capacity to fulfill this critically important role. While dedicated parents, teachers, academics and NGOs



continue to work hard to ensure that EE re-emerges in the Ontario curriculum, OEE provides an ideal method to teach children about the natural world while effectively integrating material from many other subject areas. Using nature as a classroom, educators can ignite children's interest in geometry while they measure plant growth, watch students' eyes light up as they are told a story of the First Nations settlement they are walking through, and witness participants' enthusiasm in visiting a nearby stream to study aquatic life. Our daily lives have become increasingly separated from nature; we desperately need to restore this link as soon as possible.



Government Leadership in OEE

Researchers measuring the impact of an outdoor education program in Ohio found that program length has a significant impact on the development of environmental attitudes, concluding that resident outdoor education programs lasting five days “had a positive effect on attitudinal development.”¹⁵⁹ In addition, they recommend that children from urban areas “receive an initial period of acclimation to the natural environment before environmental concepts are introduced due to their relatively limited exposure to the natural environment on a regular basis.”¹⁶⁰

It is recommended that provincial governments provide funding to school boards so that every student is assured a minimum of two one-day OEE programs and one five-day OEE program during their formative (kindergarten to grade 8) years. It should be left to the discretion of each local board as to how best to provide these experiences (e.g., the construction of their own centres, the use of facilities shared with other boards or agencies, or the rental of existing centres run by public and private agencies). This will ensure that all Canadian children have access to free or low-cost opportunities that can powerfully enhance the four values of OEE.

We do not need to look far for benchmarks in OEE. In 2004, a British federal government committee became “convinced of the value of education outside the classroom in its broadest sense.”¹⁶¹ Here are some of their findings and recommendations for outdoor education:

- “In order to realize its full potential, outdoor education must be carried out properly, with sessions being prepared by well-trained teachers and in accordance with good curriculum guidance as well as health and safety regulations. Teacher training is therefore a vital aspect of outdoor education. We are concerned that well-qualified people who know how to get the most out of these experiences should lead out-of-classroom activities.

What is the extinction of a condor to a child w

Naturalist Robert Michael Pyle

- We recommend that the Department for Education and Skills engage professional bodies to ensure that teachers have access to appropriate programmes of continuing professional development, which should include curriculum design. We also urge the department to review the place of outdoor education within Initial Teacher Training (ITT) programmes.
- The Department should issue a 'Manifesto for Outdoor Learning', giving all students a right to outdoor learning. This Manifesto should attract a similar level of funding to the Music Manifesto [over \$63 million CND] in order to deliver real change."¹⁶²

This strong support for OEE stems from the British government committee's belief that

- fieldwork and outdoor visits enhance numerous curriculum subjects
- adventure expeditions develop social skills and self-confidence
- OEE supports social inclusion by "offering children who may not otherwise have the opportunity the simple chance to experience the countryside [and] other parts of [Britain's] heritage"
- skills acquired outside the classroom are, in many cases, directly linked to the job market.¹⁶³

To achieve a similar level of support for OEE in Canada, provincial governments are urged to formally grant status to OEE, recognizing its value as a unique and powerful learning methodology that particularly addresses the pressing need of education for environment, as well as education for curriculum and community, wellbeing and character, through direct experiential connections with our natural and humanmade surroundings.

Government Leadership in OEE

Landmark legislation brings EE to the forefront of California's K-12 schools

In 2003, the Education and the Environment Initiative was signed into California law, establishing environmental principles and concepts¹⁶⁴ as essential learning for students, achieving these aims in the following ways:

- It incorporates these principles and concepts into state curriculum frameworks and textbook adoption criteria for English/language arts, science, and history/social science.
- It aligns these principles and concepts to California's academic content standards and the principles in these subject areas to ensure that students achieve mastery.
- It provides teachers and administrators with the support necessary to integrate the model curriculum into their lesson plans, ensuring long-term success.¹⁶⁵

This law gives EE a chance to make a significant impact on schools in one American state (the ninth largest economy in the world), and it also serves as an exemplary benchmark for Ontario as well as all other jurisdictions.

Lester Brown, the Director of the World Watch Institute in Washington, calls this decade the 'turnaround decade.' The turnaround refers to a radical reorientation to all aspects of our dealings with the environment that must take place in this decade if we are to avoid irreversible damage to the carrying capacities of the earth as the matrix of all plant and animal life.

¹⁶⁶

Edmund O'Sullivan

MAJOR RECOMMENDATIONS ARISING FROM THIS RESEARCH SUMMARY

The Ontario government is urged to take the following actions:

- 1) Formally recognize the value of Outdoor and Experiential Education (OEE) as a unique and powerful learning methodology that particularly addresses the pressing need of education for environment as well education for curriculum and community, wellbeing and character.
- 2) Develop a comprehensive across-all-grades sequence of school-based outdoor activities that address the four values of OEE and particularly education for environment.¹⁶⁷
- 3) Provide funding to school boards so that every student is assured a minimum of two one-day OEE programs and one five-day OEE program at recognized outdoor education centres.¹⁶⁸
- 4) Mandate that OEE be a recognized area of specialization at the Primary, Junior, Intermediate and Senior levels in all Ontario faculties of education.¹⁶⁹

The postgraduate schools of Canadian universities are also urged to promote further Canadian-based research into the various powerful and lasting benefits of OEE for all elementary and secondary school students.

Finally, the Council of Outdoor Educators of Ontario (COEO) urges government, parents, volunteer leaders and other community members to actively reclaim the outdoors as a safe, fulfilling and essential part of growing up in this province and beyond.

ADDITIONAL RECOMMENDATIONS TO THE ONTARIO GOVERNMENT

- 1) Expand the Ontario Ministry of Education's recognition of character education to include OEE.
- 2) Encourage the Ontario Ministry of Health Promotion to work collaboratively with the Ontario Ministry of Education to put in place policies that recognize OEE as an important part of good physical and mental health development.

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ABOUT the AUTHORS

Andrea Foster has worked as a campaigner and researcher for environmental NGOs Friends of the Earth Scotland and Friends of the Earth Europe. She is currently COEO's Project Coordinator. Andrea holds a B.A. in History and Political Science (New Brunswick) and a M.A. in Communication and Culture (York). She was a SSHRC recipient for her masters' research, which took place in Edinburgh.

Grant Linney has more than 25 years' experience as an outdoor and environmental educator with a variety of Ontario employers including school boards, a conservation authority, a travel agent and the provincial government. He currently teaches at the Upper Canada College Norval Outdoor School. Grant holds a B.A. in English (Queen's), a B.Ed. including OEE (Queen's), and a M.Ed. in Curriculum (Toronto). He is past president of The Council of Outdoor Educators of Ontario (COEO).

Ours is the most urban world in history. Dazzled and deafened by our own inventions, we risk forgetting that we are animals – that everything we eat, drink, and breathe comes from nature. The old may still remember air without smog, lakes without motors, and nights with no light but the stars. The young need help to immerse themselves in the outdoors, to make their own connection with nature, and thereby come to understand that the health of the society we build depends on a healthy environment. COEO makes a strong case for public funding to foster this understanding. This important work deserves public support.

Ronald Wright, author of *A Short History of Progress*

Reconnecting Children is a powerful statement on the preemptive need for outdoor education for the full development of our children. In an age where our children are caught up in computers and video games, this document makes a strong statement to parents and educators alike – that the natural world is vital to our total well being.

Edmund O'Sullivan, Professor Emeritus, Transformative Learning Centre,
Ontario Institute for Studies in Education

COEO makes an eloquent and well-researched case: "indoor" children will grow up with reduced capacity to understand, appreciate and care for the healthy nature on which we know their wellbeing utterly depends. *Reconnecting Children* is a call for us all to pay attention to the importance of giving children time and experience in the outdoors, as well as time to understand what it means to live sustainably.

Elise Houghton, Environmental Education Ontario (EEON)

As a family physician and environmental writer I know that this research summary is the best review of the work done so far on this most important issue: how to utilize outdoor education to raise children who are as happy and as healthy as they can be. Foster and Linney's work goes a long way to proving what intuition would suggest: nature is an indispensable part of child development and an essential part of education for a sustainable future.

Peter D. Carter, MD, Canadian Association of Physicians
for the Environment (CAPE)

We need only look at the state of the environment and the general health of our kids to see that we are in need of a drastic shift in the way we approach education. Experiencing and learning about the outdoors creates knowledge and respect for the planet we live on while building self-esteem and promoting healthy, active living. Everyone should read *Reconnecting Children*. The concept of a healthy mind, body and planet needs to start at the youngest age possible; we need outdoor experiences for kids now more than ever.

Jasper Blake, 2006 Canadian Ironman Champion

