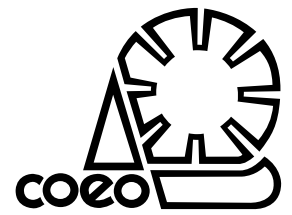


Pathways

THE ONTARIO JOURNAL OF OUTDOOR EDUCATION
Fall 2021, 34(1)



Pathways

COEO

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

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Pathways

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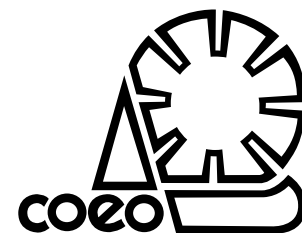
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In response to the inexcusable and tragic drowning of 15-year-old Toronto student Jeremiah Perry while on a school canoe trip, continued support for these unique outdoor learning experiences may now be in serious jeopardy. Canoe trips have a long-established place within Ontario secondary school programming. Whether curriculum-based and occurring as part of a health and physical education course, or multi-credit integrated outdoor education program, or as an extracurricular activity organized by a school outdoors club, these canoe trips have the ability to impact students' lives in many significant and meaningful ways. And so, the winter 2022 issue of *Pathways* will focus on the multiple and lasting benefits of such trips when they are purposefully organized and safely run.

We call on teachers specifically—those who plan, organize, facilitate and evaluate these unique learning experiences for students—and ask: What do you feel or know to be the lasting and important benefits of these learning experiences? What valuable lessons do/can students learn from place, physical activity, communal living, immersion in the more than human world, and time spent unfastened from modern communication technologies? What future challenges or barriers might teachers face when organizing these unique outdoor and experiential learning opportunities?

For this special theme issue, we are particularly interested in presenting personal narratives from experienced teacher-leaders of school canoe trips.

The voices and stories of former student participants, co-leaders, administrators, and advocates are also welcomed. Submissions can also include: academic research which explores the impact of school canoe trips through the approach of significant school experience, transformational learning, meaningful experiences in physical education, transfer of learning, or other method(s); articles that describe the work being done to ensure equity of access to such experiences; as well as creative submissions, which effectively communicate ideas related to the special theme, but reside outside the form and structure of what is typically presented in *Pathways*.

Pathways will be seeking theme related artwork to support this issue. Please note that the journal typically does not make use of photos. Black line art is preferred. We also hope to present many diverse ideas and experiences, and so are seeking submissions that are succinct and focused, ideally 2-4 pages in length (i.e., 1100 to 2400 words). Authors proposing articles of a greater length (5+ pages in length) should seek prior approval from the Guest Editor, Grant Linney (glinney1@cogeco.ca) for this theme issue. Detailed guidelines for authors and artists can be found on the *Pathways* webpage (www.coeo.org/pathways-journal/) and all submissions for this special theme issue must be received by January 31, 2022.

Kyle Clarke
Editor

Sketch Pad – The art for this issue of *Pathways* was generously contributed by Jazmine Yerbury, Jazmine is a multi-disciplinary artist, making 2D, 3D, digital, and hand-crafted art. Her practice includes interactive installations, such as the one for Nuit Blanche Toronto at Artscape Daniels, as well as political satire paintings, such as the one that can be found in the collection of fashion designer and art collector, Rad Hourani. The underlying commonality in her work is observation; observing the moments and objects of everyday life, the political climate that drives the media, or the way people engage with her interactive works. Her influences converge in her graphic design, where she makes websites and illustrations for people seeking an artistic aesthetic to their brand. Although a native Montrealer, Jazmine has been living and working in Toronto since 2015. Instagram: @turbo_soft, Website: jazmineyerbury.ca

President's View

I'm humbled to write the *President's View* as we prepare towards our auspicious anniversary: 50 years of learning and leading in Outdoor Education. For a half century we have fostered meaningful connections to the outdoors and to each other. As we prepare to celebrate, there is an urgent need for outdoor education. The resilience, well-being and community we help foster in youth and in each other are critical as we respond to deeply entwined crises of social justice and climate. Regenerative education requires COEO's blend of hope, courage, reflexive praxis and *dancing*.

In 2009, I danced my first fall conference. I had two important goals: to wear holes through the soles of my birkenstocks while square dancing and to record inspirations and well-wishes from COEO for my friend and mentor Mike Elrick. Just beginning my year of teacher's college in Queens OEE, I was awed by the community from which my highschool teacher had drawn wisdom and inspiration. He found kindreds with whom to share his love and commitment to Outdoor Ed. Within the smiles and sound bites I recorded, I found the same invitation he had—to join a community focused on educating for environment, curriculum, character, and wellbeing. As your new president, I extend that invitation to you again, whether for your first or 50th square dance through this COEO year.

If these past 21 months have felt like a daunting dance of pandemic pivots, COEO has had the gift of an incredible caller: Natalie Kemp. I'm grateful for the incredible leadership Natalie has provided during her two years as president. As a tireless promoter and advocate for outdoor education, Natalie has forged a new path for COEO through the ongoing pandemic. I'm thankful to have her expertise and guidance continue serving the board as past president, especially volunteering as the co-chair for our upcoming 50th anniversary conference.

Special thanks also to Liz Kirk who leaves the role of past president. Along with serving our membership through countless projects and events, Liz helped spearhead the Outdoor Wilderness Leadership Symposium which fosters mentorship and skills training for

emerging professionals. Liz took OWLS virtual in 2021. In collaboration with CANOPA and Project Canoe, OWLS focused on anti-racism, anti-colonialism, and anti-oppression in the outdoor profession, with an emphasis on how we can move from words to action.

At the Annual Meeting, you elected a board of change makers ready to support these crucial conversations and take action. Five new board members—Shanshan Tian, Peggy Cheng, Sara Deris Crouthers, April Nicolle and Bill Elgie—join Natalie Kemp, Aaron Parcher, Ben Blakey, Barbara Sheridan, Danielle Barrett, and myself who will continue to serve on the board.

We also extend our gratitude to those who served COEO for many years and have now left the board: Liz Jankowski, Minka Chambers, and Bill Schoenhardt. I am honored to have worked with such talented and hard-working educators!

Our 49th Annual COEO Fall Conference, "Embracing Wellbeing & Mindfulness", was an incredible success! We are so grateful for all who attended and presented. Special thanks goes to our hard-working conference committee: Aaron Parcher, Danielle Barrett, Liz Jankowski, April Nicolle, Minka Chambers, Barb Sheridan, M Nowick, Ben Blakey, and Kyle Clarke. Thanks also to the staff of our host site, Camp Couch, for going above and beyond to ensure a safe and nourishing gathering.

As we plan to gather again for our 50th anniversary, we are excited to grow our membership. The strong membership base of COEO allows us to advocate for the importance of outdoor education, lends credibility to our profession, and creates a strong network of like-minded educators. We hope you will encourage your colleagues and organizations to renew. COEO continues to be a supportive and vibrant community during the pandemic due in large part to the energy and enthusiasm of its members. See you on the dance floor!

Karen O'Krafka
President

Why is Outdoor Learning Not a Bigger Part of Canadian Education?

By Simon Priest and Bob Henderson

Editor's note:

This article was originally intended for an audience of school administrators and was submitted to one of their journals. It was rejected as not relevant and so is presented here as background information for outdoor practitioners to utilize as a means to begin dialogues with their school administrators.

Introduction

Recent events in Ontario have brought into question the value and safety of outdoor programs and field trips at school and some boards are cancelling all programs and trips (Henderson, 2020). The authors, with a combined 90 years of professorial and international leadership experience in

the outdoors, find ourselves asking why outdoor learning is not a bigger part of Canadian education. Given our country's pristine environments and abundant nature, combined with the fact people are happier when they spend more time outside, how could we go so wrong?

Outdoor learning is the umbrella term given to the plethora and variety of activity-based experiences, programs, and field trips that encompass outdoor recreation, outdoor education, outdoor development, and outdoor therapy. Table 1 summarizes the learning foci and main intents for these four types of outdoor programs: changes feeling, changes thinking, changes behaving, and/or changes resisting.

OUTDOOR...	...RECREATION	...EDUCATION	...DEVELOPMENT	...THERAPY
Intends to change	Feeling	Thinkingt	Behaving	Resisting Change
Subject matter or learning focus on	Enjoyment, play, fun, learning skills	New/old concepts, awareness of need	Enhance positives (grow functioning)	Reduce negatives (ease dysfunction)

Table 1: Program Types According to Program Intent to Change and Learning Focus

The aim of the program defines its label (Priest, 1996; Priest & Gass, 2018). For example, a high ropes/challenge course is a collection of obstacle elements constructed between tall trees or utility poles. Participants find their way across the elements and through the connected course without falling. However, should they slip off an obstacle, they will have a static (fixed length) safety line or a dynamic (changing length) belay rope that prevents their fall of several metres to ground level (Rohnke, 1977).

School students who are participating in that course for the purpose of enjoying the thrilling experience are engaged in recreation.

Students who participate to improve their thoughts about risk taking or competence are engaged in education. Those who are there to increase their confidence, self-efficacy, or resilience (so as to help them with future adversity) are engaged in development. Students who are there because they are unable to shift resistance or diminish maladaptive behaviours are likely engaged in therapy or a therapeutic outcome. These examples are for adventure-oriented school programs only.

However, outdoor programs can be adventurous, environmental, or a blend of both (Priest, 1986). If the subject matter

focuses on **intrapersonal** relationships (like those gained on the ropes/challenge course) or **interpersonal** (like those gained from a group expedition by canoe), then the program is adventurous. However, if the subject matter centres on **ecosystemic** relationships (the connections among the many components of an ecological unit, like a pond) and/or **ekistics** (the reciprocal and impactful associations that humans have with nature, like polluting drinking water), then the program is environmental.

However, when both approaches are blended together (such as pond studies from a canoe), a **spiritual** relationship becomes possible, where an affinity for place grows and students are ready to protect it. They do this because they understand themselves, others, the ecosystem, and how it can be damaged. This combined comprehension allows them to comfortably immerse themselves in nature, know their place in the natural world, and understand better what they can do about ensuring that all four are well cared for.

While the discipline subject matter is relationships, the pedagogical methodology is experiential (Priest, 1986). Experiential learning is a repeating cycle of action (the experience), reflection (identify lessons learned), integration (fit learning into life changes), and continuation (sustain change in the face of erosive forces). In experiential learning, the learner is actively involved in a novel experience, where knowledge derives from reflection on the experience and is grounded in that moment (Morris, 2020). Teachers conducting experiential instruction around their high school disciplines reported an increased pedagogic intensity, where the outdoors magnified their subject matter instruction (Foran, 2005).

Beyond the disciplines and pedagogy, outdoor learning can enhance and enrich other subjects within the curriculum through experiential learning (Swan, 1970). For example, biology is the most readily augmented subject with study of pond organisms, tree stump degradation, seed

transfer methods, and animal scat analysis as just a few examples. Comparing the temperatures and light intensities in the shade and sunshine in the forest and in open fields teaches about climate.

In mathematics, triangulating the width of a river or height of a tree applies trigonometry principles. Art, creative writing, Indigenous culture, and social studies history all lend themselves to outdoor learning. Physical exercises outdoors contribute to improved health and reduced obesity (Dyment & Bell, 2008). These subject disciplines and outdoor learning activities have become even more meaningful in pandemic times (Burke et al., 2021).

Developed nations around the world, other than Canada, have successfully incorporated outdoor learning into their educational curricula. For several decades, outdoor learning has long been integral to the national curricula in England and Wales (Allison & Telford, 2005) and recently in Scotland (Beames et al., 2009; Christie & Higgins, 2012). Outdoor learning has been part of state curricula (Lugg, 1998; Lugg & Martin, 2000; Brookes, 2002; Polley & Pickett, 2003; Thomas, 2018) and the new national curricula of Australia (Martin, 2010; Gray & Martin, 2012; Quay, 2016). Outdoor learning has always struggled in the USA due to the litigious and conservative nature of American society (Knapp, 1992; James & Williams, 2017). Evolutions toward curricular inclusion of outdoor learning are proceeding for Denmark (Bentsen & Søndergaard Jensen, 2012), Germany (Sahrakhiz, Harring & Witte, 2020), New Zealand (Boyes, 2000; Zink & Boyes, 2007), Norway (Buckland, 1990; Sandseter & Lysklett, 2017), Singapore (Atencio et al., 2014), Taiwan (Tsai, 2006), Vietnam (Nguyen, 2015), and several other countries (Rea &



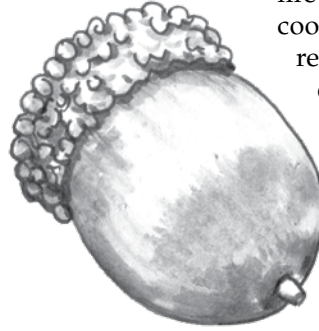
White, 2009). Canada seems well behind the times (Purc-Stephenson et al., 2019; Asfeldt et al, 2020). However, Canadian outdoor learning appears to be more a blend of adventurous and environmental (Blenkinsop et al., 2016) than outdoor learning in the UK and USA, where the two are distinctly separate.

Benefits

The research on outdoor learning is extensive. Only a few definitive and powerful studies are presented here. They are arranged by the five relationships that can be considered the unique body of knowledge for the subject matter of outdoor learning. For school-based education, academics are also discussed.

While a collection of disconnected individual studies might be enough to convince readers that outdoor learning is effective across a wide range of variables, only meta-analyses are presented here. A meta-analysis combines the results of many studies chosen with stringent criteria and statistically summarizes the general impact of those collective studies to definitively establish the strength of the experimental intervention. Meta-analysis was the technique used to determine that climate is changing, smoking is hazardous to your health, and teaching to learning styles is a myth. Meta-analysis not only provides a connected mass of evidence across a broad variety of clientele and treatments related to the variables, but also gives a deeper perspective on the trending influence and overall value of outdoor learning.

Intrapersonal relationships are those within the individual learner. How learners feel and think about themselves often determines how they behave positively or negatively. Interpersonal relationships are those communal linkages between the individual learner and others. These pro-social skills are necessary to work together as a team and even interact appropriately



on social media. Collectively, self-efficacy / concept, locus of control, confidence, and resilience, and other intrapersonal elements combine to create astute individuals who understand themselves, know their limits and capabilities, and carry a shield against life's future adversities. Similarly, trust, cooperation, communication, conflict resolution, and other interpersonal elements combine to create affable individuals who can be relied on, work well together in teams, actively listen to one another, and generally succeed in life's social situations.

A meta-analysis of adolescents in outdoor adventure programs showed consistent enhancement of self-efficacy as moderated by program duration (longer was more impactful) and initial mental health status (Fang et al, 2021). Similar results were found in meta-analyses of self-concept (Bedard, 2003; Fleischer et al., 2017). A locus of control shift away from external (attributed to others) and toward internal (attributed to self) was noted for a meta-analysis of adventure programming effects (Hans, 2000). One meta-analysis compared the pro-social behaviors of adolescents in outdoor programs with those who were not outdoors and found greater gains outside. Furthermore, more parents reported better post-program behaviors on return from the outdoors than non-outdoors, however, more youth self-reported that their behavior had improved more with the non-outdoor program than with the outdoors (Gillis et al., 2016).

Due to its tendency to change feeling, thinking, and behaving, adventure learning has been applied in therapeutic settings for children "at-risk" of substance abuse, impulse control, and personality disorders, as well as delinquency and criminality. One early meta-analysis of outdoor adventure programming with "at-risk" adolescents demonstrated that youth who attended were 62% better off than those who did not (Cason & Gillis, 1994). A meta-analysis of wilderness therapy outcomes found substantial gains in self-esteem, locus of control, behavioral observations, personal

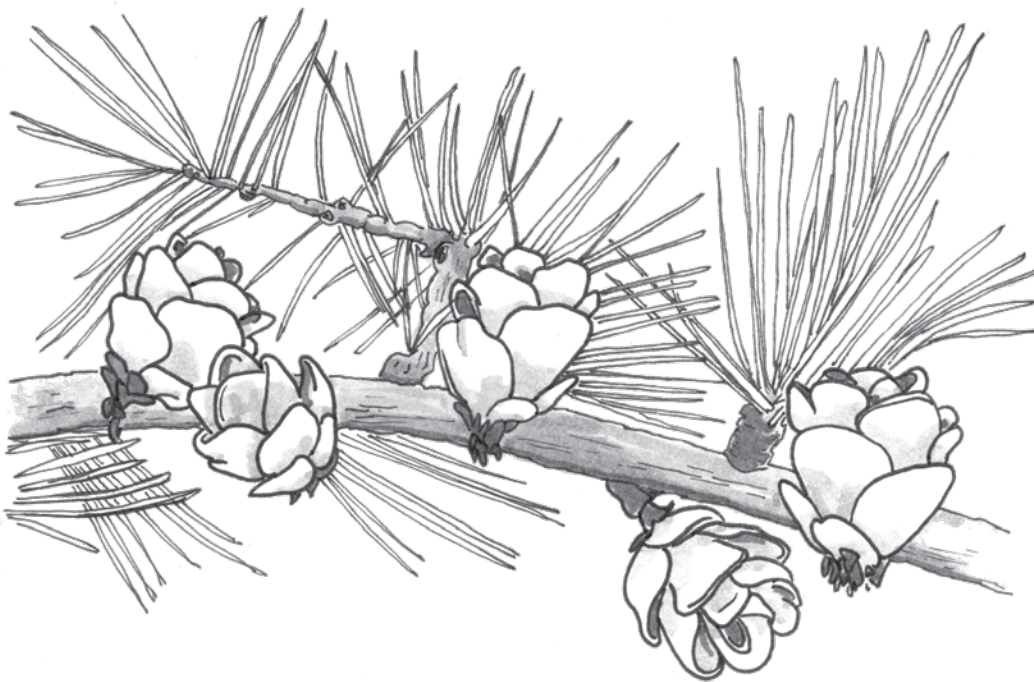
effectiveness, clinical measures, and pro-social measures (Bettmann et al, 2016). The meta-analysis for delinquent youth found lower recidivism rates for the outdoor program compared with others, but with therapy and activity intensity determining the greatest reduction in negative behaviors (Wilson & Lipsey, 2000). A massive meta-analysis of 166 studies (2,365 effect sizes) demonstrated the powerful efficacy of adventure therapy compared with alternatives or no therapy and the maintenance of change after the program (Bowen & Neill, 2013). Significant impacts were noted on academics, behavior, clinical, family development, self-concept, and social development with older children showing greater gains than younger ones.

Ecosystemic relationships are the connections made among all elements of an ecological network and concern everything from predator-prey interactions to the erosion of rock. Ekistic relationships are those between human settlements and the resources they utilize from nature. These relationships are often reciprocal: humans pollute and pollution has a cost to their livelihood. Spiritual relationships are those where the learner develops an affinity for

place and the desire to protect nature. In most school settings, these interests are found in environmental studies/sciences and place-based courses primarily.

An early meta-analysis found that the motivating factors for environmental behaviors were knowledge of issues, knowledge of action strategies, locus of control, attitudes, verbal commitment, and an individual's sense of responsibility (Hines, Hungerford & Tomera, 1987). Twenty years later, researchers replicated the analysis and added environmental attitude, behavioral control, and personal morals to the mix of psychosocial determinants of pro-environmental behaviour intention (Bamberg & Möser, 2007). These many psychosocial determinants are productively developed through outdoor learning.

The correlation between spiritual connection to nature and pro-environmental behaviors to protect it is known to be strong (Mayer & Frantz, 2004; Nisbet, Zelenski, & Murphy, 2009). A recent meta-analysis confirmed this finding across various intensities of connection and breadths of behavioral measures with a significant causal effect



(Mackay & Schmitt, 2019). A second, independently conducted, meta-analysis confirmed these findings of causality (Whitburn, Linklater & Abrahamse, 2019).

Meta-analysis has also established the associations of nature connectedness and happiness, life satisfaction (Capaldi, Dopko & Zelenski, 2014), and well-being (McMahan & Estes, 2014; Pritchard et al, 2020). Those more connected to nature appear happier, more satisfied, and with greater personal growth or functioning than those less connected or disconnected. Consequently, nature-based mindfulness and eco-therapy have evolved as positive psychology pursuits with more psychologists, counsellors, and clinicians taking clients outside into nature for therapy (Cooley et al., 2020). Meta-analyses have confirmed the value of nature connection to well-being (Djernis et al, 2019) and treatments of mental health disorders (Kotera, Richardson & Sheffield, 2020).

A meta-analysis of regular time spent in nature (greenspace) showed clear physiological health benefits such as diminished cholesterol, cortisol (stress-related hormones), heart rate, blood pressure, and heart rate variability (relaxation indicators). These benefits were linked to reduced risk of type II diabetes, stroke, general mortality, asthma, hypertension, and coronary heart disease (Twohig-Bennett & Jones, 2018). Sensory immersions in nature have been examples, historically (van Matre, 1972) and more recently as forest bathing (Antonelli et al., 2021), of where outdoor learning has led early innovations in health.

Academics include learning relative to other subjects. For example, biological outdoor learning was found by meta-analysis to be more effective than classroom education for the learning process and products (Arianti & Aminatum, 2019). One recent meta-analysis of outdoor learning for school children at risk of grade failure or behavioral expulsion demonstrated rapid advances in reading (6.3 months), spelling (2.4 months), and mathematics (7.4 months)

for only one month of programming (Priest, 2021). Canada has dabbled in integrated curricular programming (Henderson & Potter, 2001; Comishin et al., 2004), but no meta-analyses and modest research has been conducted so far (Bowdridge, 2011).

An early meta-analysis of Outward Bound (an international adventure program) indicated that average gains were better than for many educational interventions (Hattie et al., 1997). The researchers noted that gains “improved as the length of the program and ages of participants increased; too little is known, however, about why adventure programs work most effectively” (p. 43). Two of the researchers wrote that the gains “seem not only to be retained over time but to increase still further, which is impressive” (p. 2, Neill & Richards, 1998). The principle author (Hattie, 2009) placed outdoor adventure programs in the middle of 256 interventions that impacted learning. All agreed that it was a powerful intervention.

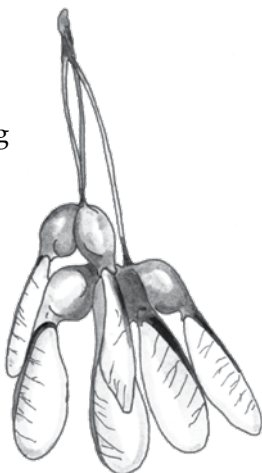
Three More Concerns

Despite the abundance of research substantiating the value of outdoor learning, some common concerns remain among parents and school administrators. After “does outdoor learning work?” the three most commonly asked questions are: “how do I know it is safe, cost effective, and high quality?” The answers to these questions often rely upon teacher training and excursion planning. However, information specific to Canada is uncommon and so we must rely on our international colleagues.

Safety. The injury of a child is always sad and fatalities are especially tragic events. Accidents in the outdoors have been rare, but were so sensationalized by the media (when one occurred) that the public consequently misperceived outdoor accidents as common and came to incorrectly view the outdoors as highly dangerous. This misunderstanding has persisted and been accentuated by additional half-truths. School administrators

making evidence-informed decisions about outdoor learning safety will want to compare the following accident and fatality data to the dangers of daily existence and may be surprised.

The adventurous side of outdoor learning is founded on the deliberate exposure of students to activities with maximal perceived risks (remoteness, great heights, moving water, dark underground caves, etc.), while competent outdoor leaders keep the real dangers at a minimum level. The American facts about outdoor learning accident rates are that they are on par with those of daily living, but common life activities such as playing or practising football and downhill skiing or snowboarding are several times more injurious than outdoor adventure activities (Javorski & Gass, 2013; Gookin & Swisher, 2015).



Also, in the USA, outdoor adventure activities had half the injury rate of physical education classes and a quarter the injury rate of amusement parks and recreational services (Project Adventure, 1987; Jillings et al., 1995). Riding in an automobile was twice as injurious as outdoor adventure activities, but several times more fatal for vehicular accidents than outdoor adventure activities (Higgins, 1981; Cooley, 2000).

In the UK, injuries among young people numbered about 1420 per year. Of these, about half were road traffic accidents (700), a sixth were household accidents (220), a tenth were suffocations (140), with smaller proportions for poisoning (125, partly substance overdose), drowning (90), fire (80) and falls (70). On annual average since 1985, six students were injured on all school trips, but half of these were during transportation and only one student was injured in outdoor learning (Baillie, 2005).

In Canada (StatCan, 2020a), deaths of school-aged children (5-19 years old), averaged annually over the past decade (2010-2019), have been due to diseases (196/year, 23%), suicide and homicide (280/year, 34%), and accidents (357/year, 43%). A closer look at types of accidents indicates that most (225, 63%) of the total (357) deaths were related to transportation and, of the remaining accidental deaths (132, 37%), five were due to forces of nature (StatCan, 2020b), but only one of those was school related: the now infamous drowning of a non-swimmer without a life jacket during a school field trip in Ontario. Transport is clearly the greater risk to children's lives than outdoor learning (Priest & Gass, 2018).

Similar patterns were present in Australia (Brookes, 2003), New Zealand (Davidson, 2004), Norway (Dahl et al., 2016), and Britain (McArdle, 2018): all nations where outdoor learning is widely accepted and integrated into school-based education. The reasons that Canada may differ from these were our novice risk management principles or procedures (Harper & Robinson, 2007), our public aversion to risk (RSA, 2010), and our increasingly litigious society: fast approaching that of the USA (Levin & Alkoby, 2021).

Cost. While environmental outdoor learning typically incurs low costs, some extremely adventurous outdoor programs have high financial prices associated with them (Bisson, 2000). This increased cost is due to a combination of professional staff, specialized safety equipment, and distant transportation. However, depending on their locations, individual schools may choose to use surrounding resources for nature immersion in the form of nearby parks, forests or ravines (van Dijk-Wesselius et al., 2020). With the ability to walk to these locales from the school, transportation costs are eliminated. Further savings can be discovered by using competent community volunteers (not necessarily parents) and by obtaining equipment sponsorships from sporting goods stores or encouraging parental purchases from thrift shops. In

the authors' experiences, visiting pristine wilderness is not a necessity for outdoor learning.

Enormous costs of a sedentary lifestyle suggest that time spent outdoors as a child develops an active lifestyle and lowers obesity as an adult, thereby easing society's healthcare burden (Pretty et al., 2007). Prevention of future disease through healthy living in youth is worth the investment. So, sustainable healthcare in Canada requires a reconsideration of spending money on education (Morgan et al., 2007).

Quality. The best forecaster of a high quality program is the combination of teaching and facilitating delivered by staff (Allen-Craig & Miller, 2007; Priest & Gass, 2018). After this premier predictor, quality is determined from a combination of the following moderators and mediators: student safety, individual respect, personal empowerment, participant engagement, experiential reflection, feedback from staff or peers, role modelling, program duration, activity intensity, group dynamics, and risk taking (Collins et al., 2012). Each of these should be attended to in great detail, yet parents will still have several questions.

Parents will be expected to have their concerns and teachers will need to address these and allay fears. They ought to prepare and disseminate information packets to the students, to their parents, and to any professional and/or volunteer staff. In organized family meetings, teachers should be ready to answer parent questions about communicating with children during residential programs or field trips, levels of supervision or discipline during activities or free time, staff competencies or qualifications, and more.

Certifying outdoor leaders (as is done in a few countries) doesn't solve the problem of student safety. Leaders are indeed an important component, but programmatic considerations are equally important. The most competent leader will be ineffective if given faulty equipment or transport

(Priest & Gass, 2018). One solution to this problem has been program accreditation. The Association for Experiential Education developed standards for common practices and a peer review process that leads to a "seal of approval" for mostly U.S. experiential adventure programs (AEE, 2021). The standards manual addresses ethical, philosophical, educational, environmental, and risk management concerns. It covers activities, staffing, emergencies, transportation, equipment, and other logistics. Overall, program safety, quality, and cost also depend on these barriers: teacher training, trip planning, time availability, fear, support, and others. Canadian organizations would be well advised to consider adopting similar approaches.



Additional Barriers

After addressing these concerns, several barriers still remain to inhibit participation in outdoor learning. These are the large obstacles that lead school boards to shut down all field trips and restrict learning to a 2x4 education (between two book covers and four classroom walls). These can all be overcome as well.

Training. Unless teachers take a specialized course of study for their undergraduate qualifications, they are not well prepared to lead outdoor learning experiences (Shume & Blatt, 2018). Their confidence to manage a large class in a wide open space, competence in experiential pedagogy or outdoor safety, and comprehension of how best to link outdoor learning to other subjects may be absent (Waite, 2020). To compensate for these possible shortcomings, more professional development opportunities are needed. Frameworks

for teacher pedagogy and leadership competence have been developed (Dyment et al., 2018; Priest & Gass, 2018). These simply need to be incorporated into Canadian university courses. Also, better books and related resources need to be developed by practitioners and academics alike.

Planning. Aside from lesson planning for environmental learning, adventure learning requires considerable paperwork, mostly associated with risk management preparation. For example, each field trip excursion should prepare a risk management plan containing: the educational rationale for the trip, program goals, learning objectives, a proposed itinerary with anticipated risks and countermeasures, a route map with escape plans, transportation details, a budget of expenses, a list of participants, their supplies and equipment, and a sealed summary of their medical/legal forms and emergency contact details (Priest & Gass, 2018). Teachers should carry copies with them and file copies with the school.

Time. Quality experiential learning in the outdoors takes time. Since it is not about memorization and other lower order taxonomic objectives and is more focused on application and other higher orders of the taxonomy, ample time for learning is required. With the demands of the entire curriculum, the school day simply lacks the availability of time to go outside. Instead, burdened by demands for testing and assessment of learning, coupled with a heavy content-laden curriculum, teachers simply default to teaching from the textbook (Carrier, et al., 2013). Consequently, outdoor learning receives occasional extracurricular time on weekends, but may require an organized field trip to implement the program.

Fear of not having the answers. Didactic teachers are used to knowing the answers to questions that students ask, but are concerned that their lack of knowledge might put them at a slight disadvantage. However, working together with the students to jointly discover the answers is a way to overcome

this barrier. The answer is not needed, if you know how to guide inquiry with the learners that leads to the answers. Instead of having to say “I don’t know” when a child asks the name of a bird or tree, the teacher can show that child how to use an identification book and (repeatedly) find out for themselves.

Lack of administrative support. Here is where school administrators can make a difference. When a school district policy is non-existent, the weight falls on the teachers to develop their own procedures for outdoor learning. This takes a great deal of time and energy as noted above. However, if school administrators have established policies and procedures, then teachers don’t have to reinvent the wheel each time they want to go outside with students. Budgeting sufficient resources also goes a long way.

Others. Concerns about staff-student ratios, inclement weather, and a burdensome emphasis on testing or formal assessment can drive some teachers away from outdoor learning (Davies & Hamilton, 2016). However, others seem to improve their job satisfaction by engaging in outdoor teaching that enhances student engagement, concentration and behaviour, with improvements in their health and wellbeing (Marchant et al., 2019). Collectively, these concerns and barriers can easily be surmounted by schools.

Conclusion

The recent pandemic has necessitated a need to re-imagine teacher preparation in Canada with an emphasis on experiential learning, indigeneity, equity, holism, wellness, and connecting with the natural world (Hill et al., 2020). Consideration must be given to balancing the risk of infection and transmission with the mental health of children returning to school in a post COVID-19 world (Fontenelle-Tereshchuk, 2021). Now, more than ever, the time is right to go outside for education and to fully incorporate outdoor learning into our nation’s school systems. Here are some initiating recommendations.

Outdoor learning should be widely and deeply integrated into Canadian education curricula. Provincial governments and their regional school districts should catalogue outdoor learning programs currently underway in schools and highlight those that are already doing good work. A few forward thinking districts should take the first leap into systemic outdoor learning and report on its educational efficacy. Other districts should then follow suit. In this way, outdoor learning will take an equitable position as a separate discipline or as integrated subject matter in the core curricula of provinces and territories. The allocation of funding and educational resources should be commensurate with degrees of engagement.

Individual schools, administrators, and teachers should inventory local and regional teaching resources and locations. They should immediately begin using these for instruction with a comfortable level of participation for teachers, parents, and students, based on their knowledge, training, and prior excursion planning. Working at the grassroots level, these teachers and administrators should also incorporate outdoor learning into their curricula and lesson plans. Opportunities should be provided to share best practices and to collaboratively crowdsource ideas across Canadian teachers and international experts.

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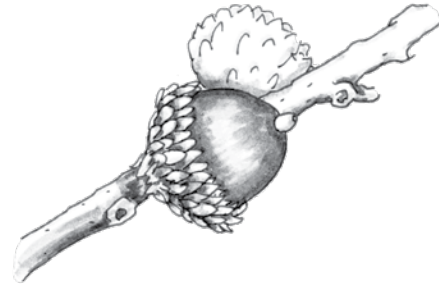
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The Growth and Professionalization of Outdoor Education in Nova Scotia

By Andrew Foran, Evan Throop Robinson, Geoff Marshall, and Jennifer Farrell

The Certificate in Outdoor Education Review (COER) is a mixed study examining the impact of an outdoor education (OE) program on Nova Scotian public school teachers, grades primary to 12 (P-12). We structure the study with an online survey targeting key program areas using Likert scales and open-ended questions, allowing for individual comments revealing teachers' insights as OE specialists. Our purpose was to determine professional growth for teachers over ten focused courses in OE. The teachers involved are graduates from the Certificate in Outdoor Education (COE) program from St. Francis Xavier University (StFX). Most currently lead OE within their respective Regional Centres for Education (RCE). The intent of this study is to isolate best practices that contribute to quality professional development (PD) for teachers that may result in sound learning experiences. The COER aims to determine how well-prepared COE graduates are to lead outdoor experiences in their respective schools; to gain an in-depth understanding of persistent and present barriers to outdoor practices in Nova Scotia; and, to discover potential gaps that may exist within the COE program in preparing future OE teachers.

COE Background

The COE is designed for teachers to go outdoors and use specialized equipment, developing specific instructional skill sets, not typically a part of physical education (PE) or regular school-based programs. The program, offered by the UNI Department of Teacher Education in the Faculty of Education, is coordinated and delivered through StFX Continuing & Distance Education (CDE). The following are required COE courses: Core Camping, Risk Management, Navigation (Orienteering, GPS), Kayaking, Canoeing, Winter Trekking (Nordic ski, snowshoeing, winter camping), Environmental Education,

Leadership-Cooperative Games, Cycling (mountain biking), and Archery or Canoe Tripping. Each course is unique in age appropriate-grade specific skills, learning and assessment, content knowledge, safety practices, and inclusionary strategies to ensure positive learning. The complexity of OE involves: skill proficiency for the teacher; current standards (best practices for instruction and safety) associated with particular activities; depth of knowledge required to allow for cross-curricular application; and, meeting the requirements for a number of certification standards (National Archery in the Schools Program; Outdoor Council of Canada: Field Leader program (hiking, backpacking, winter activities); Paddle Canada: canoeing and kayaking; Canadian Red Cross: Advanced Wilderness and Remote First Aid; and Project Wild's certificate of completion (sponsored by the Nova Scotia Department of Lands and Forestry)).

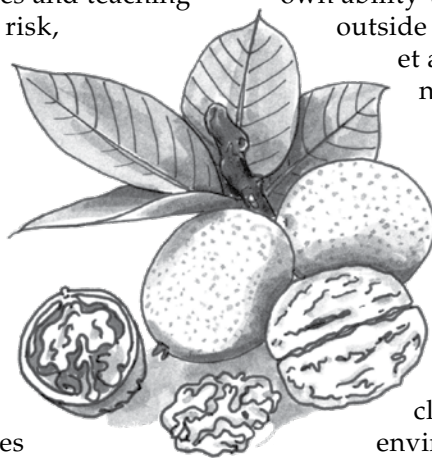
The development of the COE was due in part to StFX's commitment to Nova Scotia in leading PE, active living, and comprehensive school health initiatives. While designed primarily for PE teachers, the program is also applicable to elementary teachers and subject area teachers. The COE maintains the mandate to develop OE specialists in leading outdoor opportunities for youth. In 2013, we launched the first cohort of in-service teachers (employed teachers) to develop and enhance OE practices in public schools. Past cohorts, their respective RCE and completion dates, targeted in the COER include: Strait (2015); Cape Breton Victoria I and II (2016, 2017); Halifax I and II (2016, 2020); Chignecto Central I and II (2017, 2018); South Shore (2018); Annapolis Valley (2019); Tri-County (2019); and Mi'kmaw Kina'matnewey School Board (2020). To meet the interest and demand expressed by teachers, the COE began three province-wide cohorts open to all teachers currently employed in a

provincial RCE. By the spring of 2020, every RCE will have 20 (or more) teachers with an outdoor specialization.

Outdoor Education Literature in Teacher Education

The COE developed each of the ten courses using a Five Themes Framework: schoolyard enhanced learning, developing outdoor pursuits, outcomes and teaching strategies, understanding risk, and reconnection to the outdoors. Core COE instructors, in consultation with the Department of Education and Early Childhood Development (DEECD), focused on developing practical-localized curriculum, P-12 teacher specific. Courses incorporate in-the-field teaching strategies that model best practices (based on Canadian certification standards as above). The COER explored the five themes, emphasizing how teachers shifted and expanded their practice (or not) to include these aspects of COE Framework.

Schoolyard enhanced learning. The outdoors offers rich hands-on experiential learning opportunities to deepen lessons (Broda, 2007; Foran, 2018). A key advantage of gaining proficiency in schoolyard enhanced learning is that teachers simply need to exit the school building to teach. Broda (2007) suggests that, regardless of a school's situation, urban, suburban, or rural, the schoolyard enriches the learning environment, engages the senses, and adds variety to teacher instruction. Literature also suggests that students and teachers welcome this change in the learning environment as a motivator (Barfod, 2018; Broda, 2007; Christie et al., 2016). Equipped with the proper skillset, teachers can capitalize on the many benefits of learning in the school garden, among the trees, or in other schoolyard spaces. The outdoors is a prime location to appreciate



students' multiple intelligences, problem-solving abilities and higher-order thinking skills (Broda, 2007; Christie et al., 2016); promote on-topic discussions (Edettweiler et al., 2015); and, encourage collaboration over competition (Fägerstam, 2014). The inquisitive nature of many outdoor learning activities can lead to "spontaneous" (MacQuarrie, 2018) learning moments. When teachers have confidence in their own ability with students to deliver lessons outside (Mannion et al., 2013; Nundy et al., 2009), learning opens to numerous cross-curricular possibilities. Barfod (2018) suggests that there is "the need to master...many levels, concerning not only teaching content, places to teach, and class(room) management, but also the ability to creatively invent teaching materials" (p. 208). Although geographically close, the schoolyard is an environment requiring adequately prepared and equipped teachers to manage students outside the traditional learning environment (Foran, 2018).

Developing outdoor pursuits. Many teachers want to increase the time youth are engaged in physical activity by including outdoor activities apart from traditional sport (Foran et al., 2009; Foran et al. 2018; Lodewyk, 2011). However, teachers may lack the confidence and skill to lead a range of outdoor pursuits because they did not receive formal training in their undergraduate and teacher preparation programs (Foran, 2008; Foran et al., 2009; Foran et al., 2018). Developing skills for teachers by meeting or exceeding national or international standards in specific outdoor pursuits, targets competency and confidence for educators. Furthermore, teachers learn how to incorporate instructional strategies for each pursuit to ensure sustainable quality learning (Foran, 2018; Foran et al., 2016; Redmond et al., 2010). An important element in this thread is to plan safe, age-appropriate activities that match seasonal realities.

Outcomes and teaching strategies.

Teaching outdoors is one of many strategies teachers can use to engage students. When teachers become comfortable with outdoor instructional techniques, the likelihood of using these strategies cross-curricularly increases. Beames and Ross (2010) suggest outdoor excursions promote authentic learning through interdisciplinary adventures that exploit local history, culture, and ecology. They state that student-involvement in question development, subsequent research, reflection and sharing of their discoveries promotes meaningful student-generated knowledge. Rickenson et al. (2004) highlight that teaching outdoors positively influences student learning.

The COE built a bank of outdoor, cross-curricular, P–12 activities focused on assessment strategies to track student growth and performance. Best practices in the COE emphasize the need to modify OE and ensure inclusionary practices, allowing *all abilities* access to full participation. Austin et al. (2020) stated that specific equipment modifications and lesson adaptations incorporated directly into an OE program were essential when leading students of *all abilities*. The COE focused on the need for place and culturally responsive pedagogy. Aikenhead and Michell (2011) explain the term *Indigenous knowledge* more clearly as Indigenous ways of living in nature and situate learning experiences in a particular place in nature. A significant development in the COE program includes a culturally responsive approach to teaching—a First Nations perspective (Granzow et al., 2020; Hatcher et al., 2009) along with other global cultures (Cosgriff et al., 2012)—involving learning activities outside the classroom.

Properly integrated, outdoor learning complements indoor learning and becomes an excellent strategy to support students across all disciplines. This is particularly true among populations of students who are shy (Fägerstam, 2014), less self-regulated (Dettweiler et al., 2015), and those students requiring additional supports

(Mannion et al., 2013). Brodin (2009) believes that education out-of-doors can be more powerful when students with special needs experience inclusive learning practices. Brodin (2009) warns that moving learning outdoors creates challenges and opportunities; teachers must become proficient in structuring tasks, building routines, learning material, employing assistive equipment, and understanding risk.

Understanding risk. A key professional learning for teachers in the COE is to discern risk assessment from risk management by matching P–12 curricular expectations with the Nova Scotia Physical Education Safety Guidelines (DEECD, 2015) (the Guidelines). It is a fundamental expectation of educators to plan safe learning experiences and remain vigilant in their in-field risk management practices (Foran et al., 2018). MacKay (1996) asks: “How do you protect a child from the many risks of the outside world without smothering his or her inherent spirit of adventure and need for independence” (p. 113)? Heshka (2006) and Jackson and Heshka (2010) draw attention to risk assessment and management as essential legal knowledge and critical systems in OE practices. Heshka (2006) reveals “The underlying, unspoken (and perhaps unpopular) reason why students are hurt or killed in outdoor educational activities is because teachers are unqualified” (p. 222). Fundamentally, the legal expectation is that teachers must be professional (see Salmon et al., 2009). Meerts-Brandtsma et al. (2016) report that the significant growth in outdoor involvement, necessitates a close examination of risk management strategies and assessment of in-field hazards.

To standardize OE practices, the DEECD updated the Guidelines, addressing a wide range of outdoor pursuits. Dickson and Gray (2012) believe risk management is an organizational approach; thus, a primary focus on *prevention* would pertain to the COE. Therefore, it is reasonable to expect all teachers to want to employ injury prevention strategies and adhere to due

diligence expectations (Delaney, 2007; Young, 2007; Young 2017). Some authors indicate the importance of developing a safety culture in relation to risk management (Andkjær & Arvidsen, 2012a; Andkjær & Arvidsen, 2012b; Guldenmund, 2000). Based on a cultural analysis of risk, Eichberg (2001) and Mindegård et al. (2014) argue that risk and safety practices inform a safety culture and are best analyzed with the participants. The COE modelled risk management, enhancing a safety culture that minimized risk and maximized safety. The COE guided decision-making in the field (Boyes, 2005; Brookes, 2011) by executing quality and appropriate emergency response plans. The primary purpose in the COE is to guide teachers to develop their leadership capacity in OE, by embracing a safety culture, planning for safe learning experiences, and providing directions for teachers to develop professional practice.

Reconnection to the outdoors. The digital demand has changed the landscape for teachers. To promote student well-being, schools recognize the need to include active outdoor learning opportunities. The outdoors reconnects youth to a lifestyle that may have become foreign to their learning experience. Most significantly, teachers understand that positive learning outdoors helps foster improved self-esteem for youth. It contributes to better mental health (resiliency, coping, anxiety, phobias, improved sense of belonging), and physical health of many sedentary youth (Beames et al., 2011). The immersion in nature supports students becoming more spiritual beings as individuals and also as youth attuned to a larger community, realizing their place in the world as life-long learners (Foran & Olson, 2008). Reconnection also includes the pedagogical connections teachers experience with their students that transcends the academics to reclaim essential relational qualities once referred to as pedagogical (Foran et al., 2020; Foran & Saevi, 2012).

Time students spend in the outdoors reinforces their connectedness to nature

(Braun & Dierkes, 2017; Kossack & Bogner, 2012). Introducing outdoor activities through P-12 buffers the increase of electronic media in homes and schools, providing alternative forms of accessible recreation (Mainella et al., 2011). OE activities, and pursuits strengthen lifetime physical activity “by providing alternative ways to maintain a health-enhancing level of physical activity” (McNamee & Timken, 2017, p. 9).

Methodology

The COER is a mixed study designed to examine the impact of the COE program on graduates, many of which teach OE currently in Nova Scotia. Findings from examining the Five Themes Framework can serve in a number of ways: 1) improve the quality of OE instruction for current and future participants in the COE; 2) highlight the impacts (or lack thereof) on OE teacher practices that directly involve Nova Scotian youth; and, 3) provide indicators for COE instructors to better develop professional leadership capacity in OE considering the growth and formal adoption of OE in the public schools. Previous research into this area of OE and PE has employed similar research methodologies (Creswell, 2003). A mixed-method design (Creswell et al., 2003), allowed the COER to utilize both quantitative and qualitative data, collected concurrently throughout the program review. The data were analyzed separately and then compared, drawing on relational connections between the findings: a cross-validation.

COER

In January 2019, COER, (Research Ethics Board [REB] approved), in partnership with CDE, targeted 148 COE graduates (2013–2018 cohorts), inviting them to complete a Likert scale survey and open-ended questions to allow professional comments. The CDE received the survey responses, including the individual responses, correlated and presented the data. The CDE, along with the COER team, analyzed the survey data and reviewed the responses to make improvements in the COE.

The aim of the COER was to isolate best practices, gain an in-depth understanding of how well-prepared COE graduates are to lead outdoor experiences, identify persistent barriers that present implementation challenges for OE, and discover potential gaps that may exist within the COE program in preparing future teachers. The survey was specifically designed to determine how the graduates from the UNI COE program have valued the program in preparing them in leading OE within their respective RCEs.

The Qualtrics survey. The online Qualtrics survey was sent in a Letter of Invitation to

the COE graduates using their school email accounts. Teachers expressing interest in participating in the COER, returned a signed Consent Form to the principal investigator. These teachers were provided the on-line survey link that remained open for approximately two months, and periodically the CDE emailed survey reminders until the close. Teachers were informed they could opt out at any time and they could progress through the survey answering only the questions they wanted. In total, there was a high of 42 participants question responses to a low of 37 participant responses. The survey structure used the following scale:

Strongly Disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
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Collected survey data was intended to reveal key issues, similarities, differences, recurring ideas, clustering themes or patterns, and relationships in the range of responses to explore program effectiveness within the following categories: “Goals of the COE Program,” “Leadership and Pedagogy in OE,” “Program Responsiveness,” “Program Design and Delivery,” “How Well the COE Program Prepared You For Your Role as an Outdoor Educator in Public Schools,” “Aspects of the Program Most Helpful,” “Identified Gaps that Would Have Enhanced the Learning,” and “Considerations When implementing New Courses.” The COER aimed to identify the extent of teacher involvement in developing school based OE learning experiences, including inclusive strategies to incorporate *all abilities*. Another area helped identify school barriers to outside instruction that teachers were perceiving within their RCE. The COER intent was to reveal the connections teachers observe with their students: to nature, to OE activities, and to the transfer of COE course material.

The Participants in the Study

The COE graduates that agreed to participate spanned the province of Nova Scotia and were at different career stages (beginning – mid career – veteran). The majority were PE teachers, but the invitation to participate

included all COE graduates, some of whom teach secondary subject areas (i.e. social studies, geography, Options and Opportunities [O2], art, mathematics, and science), and elementary teachers. As per the REB parameters, the CDE removed identifying information, such as the respondents’ name and cohort affiliation. The teacher responses indicated 54.8% were active in OE and 45.1% reported they were not active as OE specialists as part of their current school assignment.

Program Results

The following discussion presents the key areas of the COER and data pertaining to CDE program logistics was removed. The Likert responses and open-ended responses presented form the basis for the analysis and recommendations specific to OE practices. By coding and categorizing this verbatim data, according to methods outlined by Creswell (2005) and Miles and Huberman (1994), dominant themes emerged, allowing for analysis and interpretation.

Goals of the Certificate in Outdoor Education

The following chart summarizes the Likert scale scores that is specifically connected to a set goal of the Five Themes Framework. The scores are as follows:

Five Themes	Range	Goal – the COE...
Schoolyard Enhanced Learning	78% strongly agree, 14.6% agree, and 4.8% strongly disagree	helps teachers expand their current practices to include quality outdoor learning experiences
Developing Outdoor Pursuits	73% strongly agree, 19.5% agree, and 4.8% strongly disagree	supports the development of the professional skill base for teachers by meeting or exceeding national or international standards in specific outdoor pursuits
Outcomes and Teaching Strategies	38% strongly agreed, 40.5% agreed, 4.8% were neutral, and 7% strongly disagreed	provides opportunity for teachers to develop assessment strategies for tracking student growth and performance improvement within an outdoor activity, including a First Nations and global cultures perspective
Understanding Risk	68% strongly agree, 24% agree, and 5% strongly disagree	helps teachers match the curricular expectations in OE, P-12, by incorporating the Guidelines (DEECD, 2015) with a focus on discerning risk assessment from risk management
Reconnection to the Outdoors	85% strongly agree, 7% agree, and 4.8% strongly disagree	models of going outdoors for positive learning fosters improved self-esteem for youth contributing to better mental health, along with the physical health of many sedentary youth

These response rates are encouraging for the program when aligned with a number of specific complimentary comments. One teacher commented that the COE provided “specific skills to lead students outside which is the first step to promote outdoor learning.” This was echoed in another response, “This is an amazing program that connects curriculum to outdoors, enhancing mental and academic health.” The COE “had the greatest direct impact on my day-to-day teaching” and, “[a]fter each course, I had a whole unit plan that I could take and teach my students. It was classroom ready.” Another teacher commented, “[I now] think outside the box when I [am] teaching inside and outside. I have found ways to make connections to nature both indoors and outdoors. Our school community has provided lots of positive comments to our administration.” Additionally, “My class loves when I take them outside. We have gone twice snowshoeing. This is something I would not have done without the course.” An overall comment, reflective of the data above states:

The [COE] has definitely enhanced my teaching and has provided my students a more authentic learning experience. I am very thankful that I have taken this program and my students enjoy the benefits...and...parents are very thankful for the opportunities as well. I am currently using my knowledge and sharing it with my staff to enable them to use their teaching knowledge outside of their 4-walled classroom and for them to engage their students in an active setting.

The above scores and comments are heartening and indicate that, generally, the five themes provide valued experiences for the COE graduates. This was captured in the following:

This program meets all standards related to outdoor pursuits in the curriculum and matched all the safety guidelines for the Nova Scotia curriculum. I thoroughly enjoyed this program, and it gave me hands-on experience in all areas of outdoor

pursuits. I would love to take an advanced COE if it is ever offered.

There were criticisms worth noting considering the COER purpose is to find ways to improve the program. For instance, one teacher stated that despite the articulation that culture would be included in the learning experience, “First Nation connections were not highlighted” and “I think the goals of outdoor education need to be promoted more to government in attempt to secure greater support for these initiatives.” These comments are important considering the following response:

Program was fantastic but I feel was accessed by a large number of teachers having no intention to ever use what is presented, rather were just looking for a ‘fun upgrade’. Similarly, the program is not always helpful going forward with assisting in providing avenues for insight/ information for collecting hardware - easily the largest hurdle presented to teachers - or dispensing information regarding

prior practices/approaches to expedite the forward progress of COE graduates.

This is a telling comment and speaks to the values this graduate has in regard to OE as a specialization.

Leadership and Pedagogy in Outdoor Education

The value of this program outcome, with emphasis on leadership and pedagogical competencies, speaks to the effectiveness in preparing teachers to lead OE within their respective RCEs. There was a consistent response rate of 40 participants and high scores in strongly agree and agree (see Figure 1). The questions within this section of the survey were intended to gain insight on professional confidence for teachers becoming OE specialists. COER wanted to ascertain how COE graduates would rank their ability over the 10 courses to conduct future practices that were cross-curricular, inclusive, and informed by relevant research.

#	Question
1	The program helped develop me as a future leader to improve education in the area of Outdoor Education.
2	The program helped prepare me to be a leader for Outdoor Educational practice.
3	The program engaged me in critical reflection about Outdoor Education pedagogy and practice.
4	The program challenged my assumptions and introduced me to new ways of thinking about Outdoor Education programming.
5	The program helped to cultivate a group of educational inquirers and researchers related to Outdoor Education issues.
6	The program provided the ability to expand instructional practice at schools: strategies.
7	The program helped me understand how to use equipment properly and safely when guiding outdoor pursuits for youth.
8	The program supported adapting instruction and equipment for inclusive practices.
9	The program provided heightened awareness specific to risk management and risk assessments for outdoor practices.

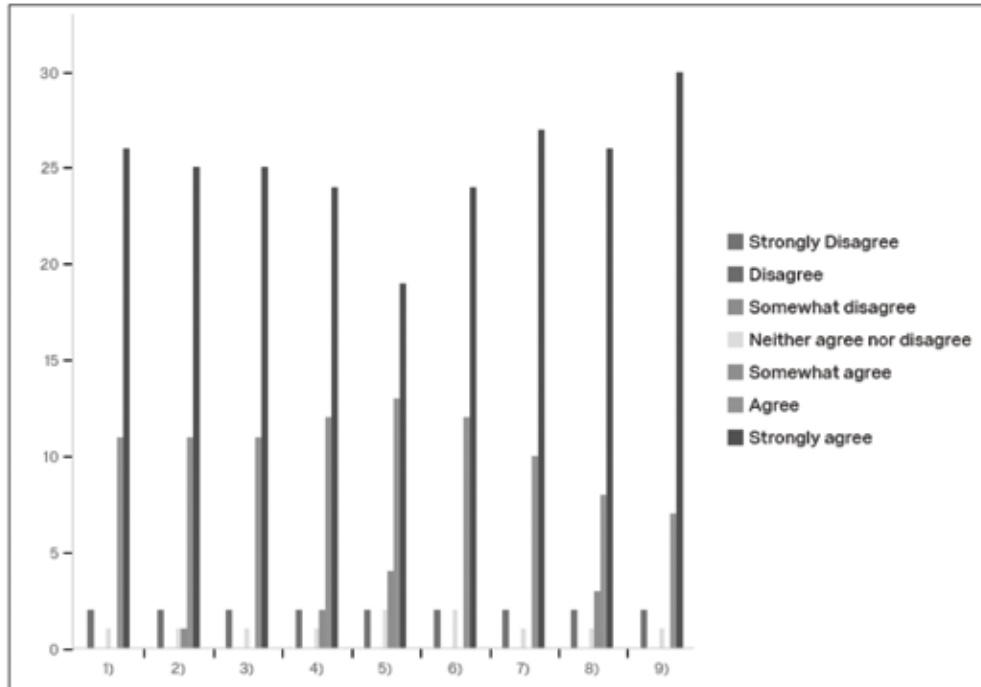


Figure 1: Leadership and Pedagogy

The comments in this section highlight teachers’ competencies: “This program taught me to be a leader in outdoor activities” and “helped me learn how to implement all areas of [OE]... . The focus on safety and risk management was immense. I felt 100% comfortable implementing [OE].” One teacher stated the COE was “Safety-oriented, student learning focused on experience - excellent.” Another comment was of particular importance due to the refence made to inclusion: “This program demonstrated all the safety precautions that needed to be in place...and how to make it accessible for ALL students.” Another teacher indicated the importance of networking: “We...teachers...[need to] stay in contact and share resources with each other when needed to help benefit student learning.”

The responses also reveal areas that still need consideration in advancing the COE instructional efforts.

resources made available during the course remained available for people that have completed the program. It would be extremely helpful if some of the teachings were recorded...so that they could be reviewed. For example, tying knots, how to build stretchers, etc. This could even be an assignment option for the cohort to put together, so again it builds a place for reference for Outdoor Educators. It would be extremely useful if the instructors put together “gear sheets”, list of gear used [in each course] and where it may be available. In the outdoor setting it was very difficult to keep track of everything...AWESOME teaching and gear tips, it was hard to retain it all.

This is telling for COE instructors. Are COE graduates overwhelmed? When teachers return to their classroom practice there are realities that need attention to help them make instructional transitions. For instance, “I am fortunate to have 1 hour dedicated to...grade 7 & 8 class for OE. This

has allowed me to really focus on building a program. Unfortunately, other schools are trying to ‘fit’ [OE] in under lesser time constraints.” And this comment was followed up with the statement: “Further in servicing is needed to help share best practices.”

COE Responsiveness, Program Design and Delivery

The following results are specific to the development of the COE program over a five-year span in preparing graduates

in becoming OE teachers. The following comments affirm the stated numbers regarding program delivery and, most importantly for future cohorts, the responsiveness we had modeling OE learning strategies.

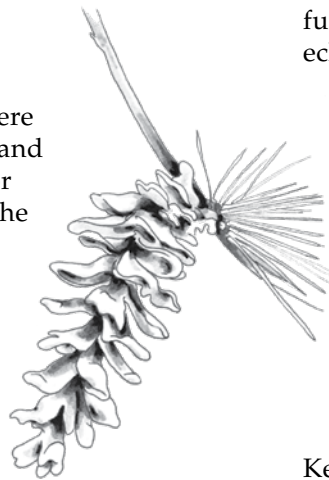


The COE...	Range	Comments
advances the leadership capabilities of teachers to understand and promote OE in public schools.	73% percent strongly agree, 19% agree, and 5% disagreed	“The design of the COE matched the expectations of the curriculum of the provinces. All instructional strategies were engaging, utilizing all modern ideas of diverse learning experiences”
instructors create a safe, positive learning environment, a quality outdoor learning space	83% strongly agree, 5.5% agree, and 3% strongly disagree	“Great work! Lots of hands on. Lots of focus on take-aways... Lots of honest feedback on gear, strategies and the ability to do activities at our schools.”
are responsive to the OE learning needs of the teachers involved	70% strongly agree, 19% agree, 2.7% somewhat disagree, and 5.4% strongly disagree	“Most sessions were hands on learning, and this was very good for me” and “[teachers] worked together collaboratively to meet the goals of the course. Topics were engaging and relevant.”
instructors threaded the major concepts through the courses making this a coherent program	62% strongly agree, 24% agree, and 5.4% strongly disagree	“The order in which courses are delivered could have been better...but I just understand it is difficult to arrange this with multiple cohorts and limited instructors. Maybe having multiple cohorts isn’t the best way.”

The criticism specific to course order revealed an important consideration for the COER team. This comment forces anyone in program design to reconsider what is occurring despite the high scores—could we sequence the learning experience better?

Professional Growth and Development

In determining the professional growth of the COE graduates, we asked the following question: How well do you feel the program prepared you for your role as an outdoor educator in public schools? We focused on the following areas: 1) PD for teachers; 2) COE program aspects that were helpful in their growth and development; 3) skills or content not covered in the cohort that would have enhanced the learning; and 4) instructional gaps, and recommendations for the COE program for future program developments.



PD for Teachers

The overall consensus based on the range of responses was that the COE was a positive contributor to teacher’s PD, preparing them as OE instructors for public school: “practical and rewarding learning” experience providing professional “knowledge and teaching tools required to engage students effectively,” and the “confidence to teach certain aspects to my class.” One teacher commented that they felt “extremely comfortable teaching [OE] in all my class[es],” and “If I were to become an outdoor educator in public schools, I would feel fully prepared.” Despite being well-prepared, one teacher offered the suggestion: “I would have enjoyed observing other outdoor educators leading youth trips.” Another teacher stated the COE was a “great asset” to their PD: the COE “provided me with a lot more

confidence.” The same teacher further qualified their position with the following: “I think that it is extremely important that [UNI] stay in touch with Cohorts for re-certification purposes for courses like Wilderness First Aid to support past cohort members. Also, I think that [UNI] may want to offer specific PD for past Cohort members, that can be marketed through the CDE.”

Another teacher shared their frustration despite being well prepared: “but [I] have been provided with few opportunities to fulfill this role in my school.” This was echoed by the following:

I feel well prepared from a content perspective. However, due to limited funding available and the time it takes to write grants, it is difficult to acquire resources to expand my program. Saying this, I have found ways to make my program, local - which cuts down on transportation costs, chaperone issues as well as provides students an opportunity to get to know their school community.

Keeping in mind the COE mandate to develop teacher leaders, the following teacher’s comment, specific to OE in public school, captured this well: “It’s one thing to gain competencies through working in the outdoor industry, this program linked key skills and concepts to the NS Curriculum and Safety Guidelines while highlighting Risk management protocols specific to NS.” These responses reiterated this professional position: “I think the program did an excellent job modeling and informing educators both in and outside the classroom. I feel confident to lead students in any outdoor activity,” and, most significantly, “Each course either helped remind me of my role or it taught me how to be better at it.” This was confirmed with the teacher that claimed “I already had quite a bit of experience teaching outdoor pursuits. The [COE] however, solidified my understanding and filled in any gaps.” Another teacher affirmed the COE “prepared me for every aspect of [OE].” A closing comment that demonstrates

impact for COE graduates confirmed, “The program gave a great introduction to a variety of pursuits. It got me thinking about what aspects of OE I can incorporate into my practice and where I need to further develop my skills and experience.”

What aspects of the program do you find the most helpful?

Responses to this question varied, reflected by complexities in PD, and the implementation of OE for teachers. Teachers commented that it was the “hands-on,” the experiential delivery, and the “time spent on doing class-based activities” in each of the ten courses that was most beneficial. These teachers stated that the “direct experience... in a canoe, in a kayak, on a bike, on snowshoes” enhanced their learning and ability to lead their own students. In short, “time with the equipment in each course is key.” One teacher captured this succinctly: “Each module that we completed gave us excellent hands-on training and classroom resources that we could immediately use.”

Another set of responses revealed that there was value placed on “Connections to NS Public School Curriculum and examples of adaptations/accessibility for all students.” For some teachers there was an “educational focus and links to curriculum documents [and] safety guidelines.” Reading this was important to the COER team considering the effort to develop OE as a school-based program. Moreover, a number of comments raised the importance of risk management: “I enjoyed the risk management concept of all programs because risk and safety are two pieces that usually cause conflict with parents and the school;” “risk assessment was specific to the activities that are designed to get kids outdoors;” and finally, the “wilderness remote first aid/risk management” course was effective PD. Specific to the area of risk, teachers commented that this included: “Pre-trip planning: forms, letters, permission requests,” and the “Modeling and creation of checklists to ensure preparation. Showing how to deal with a variety of situations.” These comments reflect that COE graduates

appreciated the professional value of these elements in their practice.

An unforeseen theme that emerged in the COER were comments indicating the importance of a teacher network: “The development of a group of people from whom information and experiences can be shared.” This was confirmed by another teacher who stated: “The network of educators that was created has gone beyond the course dates and we continue to support one another. Discussions often brought out aspects of OE that many of us may not have thought of.”

Was there anything that was not covered in the cohort that would have enhanced the learning?

The COER sought areas to consider for future improvements. COE graduates offered many practical ideas: “Slack lines and bouldering,” the “relationship of the pursuits studied to First Nation land-based activities such as hunting, fishing, trapping, eeling, gathering medicines,” relevant to Nova Scotia, and “surfing and SUP.” Teachers suggested improving teachers’ understanding specific to the certifications awarded in the COE: “how often to re-cert and how to do so or how to upgrade our certs.” Teachers requested a focus on securing equipment, creating “avenues for access and how to organize time within and across boards to collaborate with other teachers. A lack of equipment/hardware and access to it is the number one hurdle I face on a very consistent basis.” These were important and critical comments to inform future development of the COE.

Were there any gaps in content that you feel should be added?

Despite a number of respondents stating simply, “No”, and the program overall “was a very well thought out lineup of courses,” one teacher did suggest that “there should have been choice or opportunity for us to deliver activities to students as part of assessments.” Another suggestion considered a new course offering: “it would

be good to have a ropes (low or high) component.”

Additional comments for COE instructors to consider when implementing new courses.

The COER noted numerous comments from teachers who felt supported in the COE. One comment, however, gave pause: “To be successful, the program need(s) positive mentors in each of the roles,” as that is the holistic aim of the COE: to encourage and mentor the growth of OE in Nova Scotia. The COER also noted the continuous connections from teachers to “Keep [the COE] very hands on and outside. People have to live it to understand and feel the difference from conventional ways.” However, it was noted that the following would be helpful when implementing new courses – a provincial equipment list: “generated for various activities. The purpose would be to serve as an avenue for purchasing approved/recommended equipment. This...would hopefully smooth the way for teachers to gain administrative support for purchasing resources.” These comments will be helpful to consider for future development of the certificate program.

Impacts and Implications

We recognize that the COER findings do not represent all involved in the COE, yet reflection on the data has provided us with significant program insights. The scope of our review began with determining the effectiveness of professional growth for teachers upon completion of a ten-course program. Our research intends to isolate the best practices that contribute to quality PD for OE teachers. We aimed to determine how well-prepared COE graduates are in facilitating OE learning experiences for children, the existence of barriers to OE, and potential gaps within the program in preparing OE teachers. Our analysis of the effectiveness of professional growth across five program themes reveal noteworthy findings for policy, practice and theory, with implications for program development and

course facilitation for future cohorts.

Generally, COE graduates acknowledge that they are well-prepared to lead OE experiences in their respective RCEs. With over 90% of respondents indicating their agreement and strong agreement with indicators in schoolyard enhanced learning, developing outdoor pursuits, and reconnection to the outdoors, we are confident in the program’s theoretical stance and primary objectives to get teachers outside, using specialized equipment, and developing specific skills in a wide range of quality outdoor activities. With respect to the outcomes and teaching strategies theme, we note data indicating the need for further work in this area. While clearly still in majority agreement (>78%) of the COE’s pedagogical approach overall, 40% of respondents state they ‘agree’ with the indicators rather than ‘strongly agree’. Specifically, teachers suggest further development of assessment strategies to track student growth and performance. The COE makes continuous effort to model effective instructional strategies and inclusionary practices to ensure meaningful learning experiences for all participants. An additional focus linking these critical instructional strategies unequivocally with authentic, formative assessment strategies would also ensure teachers gain a fuller account of student development, progress, and learning (MacQuarrie, 2018).

A key learning for teachers is to discern risk assessment from risk management. In each course, teachers undergo a process of identifying potential risks pertaining to grade level, activity, and teaching location. A lower-than-expected percentage of respondents strongly agree (68%) and agree (24%) with the indicators in the understanding risk theme. We aim to ensure consistency for all OE instructors in program expectations regarding risk, safety modeling and presentation of realistic strategies to prevent injury and minimize risk (Andkjær & Arvidsen, 2012a; Dickson & Gray, 2012). Therefore, we appreciate a refocus on how to maximize safety for learners by developing leadership capacity

in OE through risk assessment tools such as “The 7 Rights” (Foran, et al., 2018).

In determining program effectiveness for teachers, we recognize there was professionalism growth, through the completion of ten focused courses, and these teachers found a common voice and sense of agency for the OE discipline. This, in our view, is most significant in the COER, as teachers expressed a want for more professional connection among members of all cohorts and a call to “stay in touch” even after formally completing requirements of the certificate. Graduates proposed a goal to build a provincial network to support OE pursuits across all RCEs. This, we believe, addresses a persistent and present barrier to OE in Nova Scotia: the lack of a professional network to provide on-going support for COE graduates. Such a network could provide teachers with a wide range of personal and professional supports including, follow-up information and reminders, guidance for re-certification, potential opportunities for certification upgrades and other PD, mentors, lists and lessons, and regional equipment purchasing and sharing programs (Barfod, 2018; Mannion et al., 2013; Thorburn & Allison, 2013).

Qualitative data also show potential gaps in the COE. Respondents drew our attention to the cultural responsiveness of the program and, specifically, the focus on Indigenous ways of living in nature (Aikenhead & Michell, 2011). While currently integrated throughout all ten courses, a refocus on First Nations’ ways of being and knowing for OE is a critical factor for our course planning and development for future cohorts. Specific highlighting of Indigenous connections in OE are appropriate for the next iteration of the COE. We aim to build stronger relational ties through community connections with Elders and Knowledge Keepers, as well as deeper curricular foundations within the discipline of Treaty Education (Granzow et al., 2020; Hatcher et al., 2009). This aligns strongly with suggestions from COE graduates to promote the goals and objectives of OE to government, thereby

securing support for these initiatives, contributing to future policy directives for Indigenous education, and answering specific calls to action from the Truth and Reconciliation Commission.

Recommendations

We are encouraged by the results of the COER. This evaluation provides significant evidence and quality assurance of the aims and intent of the COE. With our goals clearly articulated, and through the careful assessment of the achievement of our goals, we propose three recommendations for future iterations of the COE:

1. Consider options to build and maintain an OE network in Nova Scotia: We acknowledge that our graduates at times feel overwhelmed with the responsibility to carry the load in OE across the province. We aim to acknowledge the realities of teaching in subsequent cohorts and to enhance mentorship with graduates and current students. Sustaining our on-going relationships and building capacity among OE teachers by sharing expertise and experiences will lead to a strong OE network. We hope to ignite further conversations across the province and to spark engagement with current strategies and skills to promote convergence around best practices, and other practical suggestions, as stated above that will lead to improved program effectiveness. Building and maintaining a professional and personalized learning network in Nova Scotia will provide educators the opportunity to connect with peers allowing for continual growth in their practice and an opportunity to learn how others differentiate and modify activities to ensure inclusion for all learners.
2. Connect Treaty Education more explicitly with OE across the program: We are reminded of the importance to build and sustain our OE network relationally and in community with

Indigenous educators and learners. We aim to build on existing relationships, and, through invitation to Elders and Indigenous community members, engage further in pedagogical approaches rooted in Indigenous ways of knowing, being, and doing. Our goal is to enhance mutual learning and to celebrate the land and resources in reciprocal relationship built on trust among all participants who actively seek value-added information, strategies, and skills for each other.

3. Consider new course offerings: In anticipation of the on-going realities facing Nova Scotia teachers in OE, we consider options to develop new courses for the COE as needs arise and interests develop. Our goal is full alignment with Nova Scotia curriculum guidelines and our intention is to promote this fully to government and disciplinary specialists. Regarding this, we propose regular review on the sequencing of courses and consideration of options for the future, including an offering of additional PD to COE graduates as a way of maintaining connections or offering re-certification in key areas. It is critical to the program for teachers to have access to materials and resources, equipment lists for purchasing approved or recommended equipment, and further integration of practical instructional ideas. Establishing a database of materials, resources, and instructional support media would support and sustain on-going professional learning for our graduates.

Undertaking the COER has spurred potential for further research opportunities in our field. A thorough follow-up with teachers through key stages of their careers would assist us in determining new needs and challenges that arise. Research into such checkpoints would contribute to our efforts to continually adjust and modify the COE program to meet teachers' changing realities and provide the most meaningful curriculum available. The UNI embraces the COE as an important outreach component of the offerings of C&DE in Nova Scotia. The results of the current COER documents

our success in enhancing teachers' skills in OE, illuminates areas for growth and improvement as the COE continues to evolve, and will be useful in our recruiting efforts for future cohorts.

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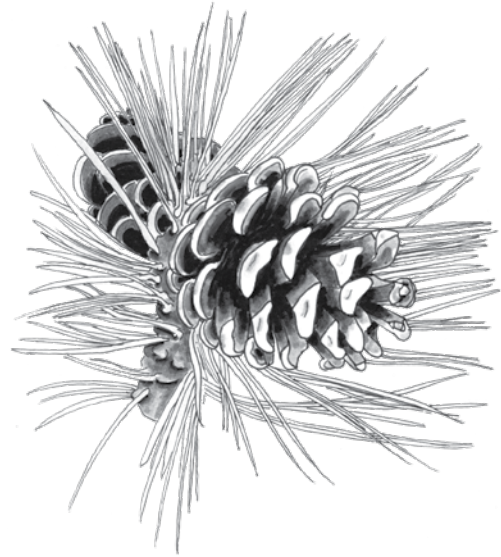
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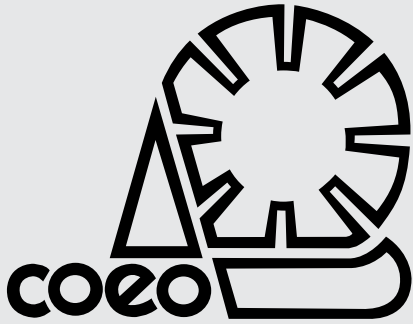
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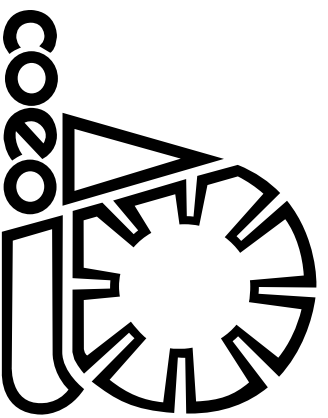
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