

# Indigenous Knowledges and Western Knowledges in Environmental Education: Acknowledging the Tensions for the Benefits of a “Two-Worlds” Approach

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## **Abstract**

*Indigenous worldviews and Western worldviews stand in stark contrast to each other in many ways, including their perspectives regarding the Earth and her resources. Typically the differences between these two philosophies of life are highlighted and placed into an antagonistic relationship that seems irreconcilable. This paper upholds that within this tension there is a great opportunity for learning and for mutual understanding. We argue for using a “two-worlds” approach that engages both Indigenous knowledges and Western knowledges within environmental education. A “two-worlds” approach has the capacity to enlighten both educators and students and promote relationship-building between Indigenous and non-Indigenous peoples and their respective cultural understandings. Two worldviews can be drawn upon to create collaborative models and solutions to address our collective environmental challenges.*

## **Resume**

*Il y a sur plusieurs plans un contraste frappant entre les perspectives autochtone et occidentale du monde, particulièrement dans leur conception de la Terre et de ses ressources. En règle générale, les différences entre ces deux philosophies dégénèrent en rapports antagonistes donnant lieu à première vue à un conflit irréconciliable, mais elles peuvent créer des occasions d'apprentissage et de compréhension mutuelle. Nous invoquons une approche réunissant ces « deux mondes » et mettant en jeu et les savoirs autochtones, et les connaissances occidentales au sein de l'éducation environnementale. Ce genre d'approche permet d'éclairer tant les éducateurs que les élèves, et de tisser des liens entre les autochtones et les non-autochtones et leur conception culturelle respective. On peut s'inspirer de deux représentations du monde pour créer des modèles de collaboration et trouver des solutions aux défis environnementaux que nous partageons.*

**Keywords:** Indigenous knowledges, Western knowledges, environmental education, “two-worlds” pedagogical approaches, decolonization

## Facing our Environmental Future Together

In today's world of global climate change, concern for the environment is intensifying and receiving more attention on a universal scale. Environmental programs in universities and colleges are growing and enrolment is expanding. Also increasing is the attention that Western science is giving to Indigenous knowledges to address the environmental challenges that are degrading the earth, as well as the attention being turned to Elders' intimate knowledge of the land for insight and solutions.

Indigenous knowledges inherently include environmental or land-based knowledge because they stress the importance of the holistic connection of all living beings to Creation and the Earth as well as all relationships between these forces—relationships of humans to humans, to animals, to plants, to the elements, to the spirit world, and to the cosmos. Environmental education programs in general are taught from a Western perspective and typically do not engage with Indigenous knowledges. The qualities identified in this paper for both Indigenous and Western knowledge systems represent indicative tendencies within a myriad of diversity. We recommend that the reader understand these qualities cautiously to avoid any overgeneralizations or categorize them as rigid, monolithic, or definitive. We argue that a more inclusive pedagogical approach to environmental studies and/or education through the acknowledgement of Indigenous knowledges into its curriculum delivery processes would not only enhance environmental understandings, but also better prepare students and instructors to effectively address the world's growing ecological concerns.

There are several already established post-secondary environmental programs that uphold such inclusive models. Our experience and observations in upholding such models show that the most successful seem to be those that engage with both Western knowledges and Indigenous knowledges (see also Anuik & Gillies, 2012; Ball, 2004; Bartlett, Marshall, Marshall, & Iwama, in press; Donald, 2009, 2012; Fitznor, 2005; Gross, 2005, 2010; Hatcher & Bartlett, 2010; Iwama, Marshall, Marshall, & Bartlett, 2009; Kovach, 2005, 2009a, 2009b, 2010). Although Western perspectives and Indigenous perspectives regarding the environment/land seem to stand in stark contrast to one another, it is within this tension that differences can ultimately work together to advance deeper understandings. This paper will highlight the differences between Indigenous worldviews and Western worldviews in relation to the environment/land, as well as discuss the detrimental effects of the hegemonic Western idea of education and colonialism on Indigenous peoples and their lands. We then move to a discussion of the need to decolonize environmental education and suggest using a "two-worlds" approach. Our experience in the delivery of this pedagogical model has resulted in positive impacts on students both personally and collectively, in terms of enhancing understandings between divergent knowledge systems and the building of respectful relationships between Indigenous and

settler populations. We also comment on the challenges and complexities of implementing such a vision, and argue that an inclusive pedagogy in which both Indigenous and Western worldviews and knowledges are acknowledged and engaged is the way forward for an enlightened, holistic, and socially just environmental education for both Indigenous and non-Indigenous students.

### Indigenous Worldviews: Relationships, Responsibility, Reciprocity, and Respect

Indigenous worldviews observe knowledge differently from Western worldviews. Shawn Wilson (2001), Opaskwayak Cree, emphasizes that one major difference between dominant Euro-Western paradigms and Indigenous paradigms is:

...that those dominant paradigms build on the fundamental belief that knowledge is an individual entity: the researcher is an individual in search of knowledge, knowledge is something that is gained, and therefore, knowledge may be owned by an individual. An Indigenous paradigm comes from the fundamental belief that knowledge is shared with all creation. It is not just interpersonal relationships, or just with the research subjects I may be working with, but it is a relationship with all of creation. (p. 75)

Fyre Jean Graveline (1998), Métis, explains that the idea of kinship is based on the concrete observation that each of us is totally dependent on everything else: “That which I exhale, the tree inhales. We live in a world of many circles; these circles go out into the universe and constitute our identity, our kinship, our relations” (p. 57). Similarly, Anishinaabe scholar Winona LaDuke (1999) advocates:

Native American teachings describe the relations all around—animals, fish, trees, and rocks—as our brothers, sisters, uncles, and grandpas. Our relations to each other, our prayers whispered across generations to our relatives, are what bind our cultures together. The protection, teachings, and gifts of our relatives have for generations preserved our families. (p. 2)

Susan Miller (2008), Seminole, adds that the Indigenous paradigm may be viewed as a way of relating to everything else in the cosmos:

In Indigenous thought, people are seen as families or communities rather than individuals. The pervasive importance of the family surpasses even its considerable importance in American and other non-Indigenous worldviews. Indigenous family encompasses the entire cosmos: Earth is the Mother; and the Sun, the Sky, or a powerful celestial entity is the Father. Every element of the cosmos has a place in the family. Everything is alive and has needs and rights. (p. 27)

Thus, people must concern themselves with the health and well-being of everything in the cosmos just as they concern themselves with their families and communities (Miller, 2008). There is an inherent responsibility attached to

this way of thinking about oneself in relation to the entire cosmos, grounded in relationships, and how one relates to all of Creation.

Gregory Cajete, Tewa educator (2004), surmises that “Native American philosophy” is ecological philosophy because it incorporates information gained from “interaction of body, mind, soul, and spirit with all aspects of nature” (p. 46). Cajete’s approach is a philosophy of Native science:

Native science reflects a celebration of renewal—the ultimate aim is not explaining an objectified universe, but rather learning about and understanding responsibilities and relationships and celebrating those that humans establish with the world...Native scientific philosophy reflects an inclusive and moral universe. All things, events, and forms of energy unfold and infold themselves in a contextual field of the micro and macro universe. In other words, Native science is inclusive of all the ways that humans are capable of knowing and understanding the world. (p. 55)

The key distinctive assumption of an Indigenous worldview is that the cosmos is a living being and that the cosmos and all its parts have consciousness (Miller, 2008). Because of this assumption, the relationship between humans and all parts of the cosmos inherently speak to notions of reciprocity and respect.

Another central principle of the Indigenous paradigm is the idea of reciprocal interaction through which all relationships must be balanced. Miller (2009) articulates: “as the terrestrial Mother and celestial Father nurture the human communities as children, human communities then reciprocate with gifts, gratitude, and right behaviour, often understood of as ‘balance’” (p. 28). Miller further explains that this balance means that no member of the cosmic family should take more than they give or give more than they receive and, furthermore, overlapping this concept of reciprocity is the concept of respect. Cree scholar, Evelyn Steinhauer (2002), explains that according to Cree Elders, showing respect is a basic law of life:

Respect regulates how we treat mother earth, the plants, the animals and our brothers and sisters of all races. Respect means you listen intently to others’ ideas that you do not insist that your idea prevails. By listening intently you show honour, consider the well being of others, and treat others with kindness and courtesy. (p. 72)

One of the starkest differences between Indigenous and Western worldviews in regard to the environment/land is in terms of spiritual relationships. Marilyn Verney (2004), Diné scholar, states: “To truly understand American Indian philosophy one must first understand our spiritual relationship, our connection with the land, with Mother Earth” (p. 134). Lewis Cardinal (2001), Cree, reveals this sentiment in his discussion of an Indigenous perspective:

In Latin it means “born of the land” or “springs from the land,” which is a context. We can take that to mean “born of its context,” born of that environment. When you create something from an Indigenous perspective, therefore, you create it from that environment, from that land in which it sits. Indigenous peoples with their traditions

and customs are shaped by the environment, by the land. They have a spiritual, emotional, and physical relationship to that land. It speaks to them; it gives them their responsibility for stewardship; and it sets out a relationship. (p. 180)

Species of animals and plants are siblings or close relatives of human communities among many Indigenous peoples and thus must be treated respectfully as they too have rights and needs. Miller (2009) poignantly affirms that “because everything in the cosmos is sacred, all human activities are sacred: government, education, agriculture, hunting, manufacture, architecture, recreation. Nothing is secular” (p. 28). She reminds us that in light of this reality that everything must be done with this in mind: “The well-being and even the survival of Indigenous peoples and the living cosmos depend on the integrity of this entire set of relationships” (p. 28). Indigenous paradigms and/or worldviews are inclusive of all the cosmos as well as the spirit world: they are based in relationship, responsibility, reciprocity and respect—and, most importantly, are intimately connected to the Earth and her processes.

This intimacy with the Earth results from long-term sustainable relationships that Indigenous peoples developed over millennia with their specific environments/lands and is upheld through their living ancestral knowledges and teachings. Dwayne Donald (2009), Métis scholar, emphasizes that the longevity of the relationships maintained by Indigenous peoples with their lands is significant and speaks to an inherent sovereignty:

This long-term habitation has supported and perpetrated deeply rooted spiritual and meta-physical relationships with the land (and other entities) that thoroughly inform and infuse the specific cultural practices and linguistic conventions of the people. Indigenous communities are considered unique, in relation to other distinct communities, because these venerable connections to land and place have been maintained and continue to find expression in communities today. In this sense, then, Indigenous peoples, as descendants of the original inhabitants, are seen as the holders and practitioners of a *sui generis* sovereignty in their traditional lands that typically finds expression as wisdom tradition. (p. 19)

Thus, Indigenous worldviews are much more than great amassed bodies of knowledge: they are living knowledges and representative of ancient relationships that characterize the distinctiveness of these peoples and the deep connectivity to the environments/lands in which they live: Indigenous worldviews are alive and dynamic.

### *Colonialism, Western Hegemony, and Decolonization*

Most Western educators believe their approaches to be based on value-free techniques and thinking; however, they are still dominated by philosophical ideas that developed in the 17<sup>th</sup> to 19<sup>th</sup> centuries and are centred on the separation of humans from nature, or humans from their natural environment. Willie Ermine

(2007), Cree scholar and ethicist, upholds that one of the “festering irritants” for Indigenous peoples, in their encounter with the West, is “the brick wall of a deeply embedded belief and practice of Western universality” (p. 198) and central to this belief is the propagation of a singular worldview, a monoculture with a claim to one model of humanity and of society.

Jessica Ball (2004) suggests that non-Indigenous academics need to recognize and accept responsibility for the potentially colonizing and acculturative effects of “mainstream” curricula: “When a mainstream, standardized, one-size-fits-all curriculum is all that is offered, too often the result is a homogenizing, monocultural, colonizing approach to community and human service development that is inappropriate for the varied social ecologies of Indigenous children and families” (p. 457). Maori scholar, Linda Tuhiwai Smith (1999) articulates that Indigenous peoples’ perspectives have been silenced, misrepresented, ridiculed, and even condemned in academic as well as popular discourses.

Colonialism not only negatively affects Indigenous peoples’ experience in spheres of academia and scholarship but it also disrupts the reciprocal relationships that Indigenous peoples hold with their lands. In particular, the forced removal of Indigenous peoples from their lands has had long term consequences by severing a variety of relationships held in reciprocal balance between themselves and all of Creation, integral to a sustainable and healthy way of life, or what Miller (2009) has called “Indigenous environmentalism.”

Indigenous environmentalism is an expression of relationships. It recognizes that human communities and their environments are inconceivable except as a single, integrated whole, each part dependant on the others for health and survival. Because Indigenous communities depend on local resources, degradation of their environments or removal from those environments injures them rapidly. The Indigenous activists’ slogan, “We are the land, and the land is us,” encapsulates this set of relationships. Indigenous peoples promote biodiversity and environmental health with respectful, reciprocal, and holistic treatment of land and resources. (p. 29)

It must be emphasized that Indigenous environmentalism is very different from Western environmentalism. Marie Wilson, a Gitksan-Wet’sumet’en tribal councillor, sums up this difference in the following statement:

I have to say that the Indian attitude toward the natural world is different from environmentalists. I have had the awful feeling that when we are finished dealing with the courts and our land claims, we will then have to battle the environmentalists and they will not understand why. I feel quite sick at this prospect because the environmentalists want these beautiful places kept in a state of perfection: to not touch it, rather to keep it pure. So that we can leave our jobs and for two weeks we can venture into the wilderness and enjoy this ship in a bottle. In a way this is like denying that life is happening constantly in these wild places, that change is always occurring. Human life must be there too. Humans have requirements and they are going to have to use some of the life in these places. (cited in Smith, 2005, pp. 63-64)

Western thinking environmentalists tend to think of the land in terms of protectionism and conservation (no resource extraction and limited or regulated use of the land) while Indigenous peoples look to the land in terms of engaging with it by upholding relationships and responsibilities (hunting, gathering foods and medicines, and engaging in ceremony with the land). Despite these differences, Western environmentalism and Indigenous environmentalism can work together and utilize ideologies from both systems of thought as a “two-worlds” approach: protect and conserve the land for activities that espouse (Indigenous) respectful, reciprocal engagement in relationship with it.

Similarly, Leonard Tsuji and Elise Ho (2002) refer to Traditional Environmental Knowledge (TEK) and Western science and how the often stated differences (objective versus subjective, qualitative versus quantitative, the atom versus spirit, oral versus written, etc.) are in effect the same idea, but that the epistemological foundations such as data collection, storage, and interpretation are different. They suggest that TEK and Western science “are clearly different variations of a universal truth” (p. 346). Importantly, they also stress that although there exists common ground between them that “integration” of the two should not be a goal but rather that TEK and Western science should be viewed as “separate but complimentary sources of information and wisdom,” and “where practitioners of both would benefit from a reciprocal flow of knowledge” (p. 346).

Donald (2009, 2012) draws on his mixed Papaschase Cree and European ancestry and has developed a “decolonizing research sensibility” he calls “Métissage.” He describes Métissage as:

a way to hold together the ambiguous, layered, complex, and conflictual character of Aboriginal and Canadian relations without the need to deny, assimilate, hybridize, or conclude. It describes a particular way to pay attention to these tensions and bring their ambiguous and difficult character to expression through reading and writing. (2012, p. 536)

Donald’s Métissage purposefully mixes and juxtaposes diverse forms of texts, both Indigenous and non-Indigenous, as a way to reveal that multiple sources and perspectives influence experience and memories. He highlights the importance of relationality and how texts and lives are relational and braided together rather than independent. “Colonialism is a shared condition wherein colonizers and colonized come to know each other very well” (Donald, 2009, p. 6). Donald argues that curricular and pedagogical work dedicated to the goal of decolonization in Canada must engage critically with the colonial nature of these relationships connecting Aboriginal peoples and Canadians. Métissage is a way to reconceptualize and decolonize historical consciousness in the context of teaching and learning today.

Decolonizing mainstream education will ultimately include the engagement and implementation of Indigenous pedagogies within Western academic contexts. Margaret Kovach (2009a), Plains Cree and Saulteaux scholar, suggests that



while colonialism has interrupted the organic transmission of Indigenous knowledges, many Indigenous peoples recognize that for their cultural knowledge to thrive, it must live in many sites, including Western education and research. This process will entail active participation in projects of decolonization (see Root, 2009) and that mainstream environmental educators must make an attempt to reflect critically on the nature, scope, and processes of colonialism in Canada.

### *Understanding the World Without Harming It*

The current mainstream zeitgeist promotes a model for living that supports the priorities of a materialistic society in which capitalistic ideals seemingly justify unlimited resource extraction—and this type of lifestyle is alarmingly unsustainable. According to Kovach (2009a), many young people are increasingly attracted to Indigenous approaches because this generation is seeking ways to understand the world without harming it. The way towards a caring consciousness and sustainability in environmental education can be built upon the acknowledgement of and engagement with Indigenous knowledge systems.

It is the human disconnect from nature that stimulates what Donald (2009) refers to as “the perpetration of epistemic and institutional violence” (p. 19) and it is the denial of this land connectivity that allows this violent exploitation to continue. He argues that Indigenous insights about the land and relationships to that land should be upheld as curricular and pedagogical considerations because “they belie the assumed universality of conventional Eurowestern approaches” (p. 19) and he believes that there is much to be learned from holding different knowledge systems in tension. Similarly, Angayluqaq Oscar Kawagley (2001), Yupiaq scholar, points out that there are many alternative approaches that are nature-friendly and sustainable in the Eurocentric world of science and technology and that they “await the time when global societies transcend consumerism and materialism and orient themselves toward conservation and regeneration” (p. 206). He stresses that Indigenous societies worldwide “have much to share with the modern world” and he advocates for changes to education systems in which Indigenous peoples and non-Indigenous peoples learn both ways of learning and doing, “so that we can begin to develop a caring consciousness and technology that is kind to us as humans, kind to the spiritual, and kind to the environment” (p. 206). This can be accomplished through a commitment to a “two-worlds” approach to environmental education.

### *A “Two-Worlds” Approach: Enhanced Understandings and Meaningful Relationships*

Approaching environmental education through a “two-worlds” pedagogy offers both students and educators opportunities to expand their understandings at the intersection of difference between Indigenous and Western knowledges as well as ameliorate and strengthen relationships between settler populations and Indigenous peoples. A “two-worlds” approach, one that upholds both Indigenous



and Western worldviews, has been accomplished in various academic locales across Canada and the United States. Lawrence Gross (2005, 2010), Minnesota Chippewa, engages with what he calls a “blended” teaching method that draws from American Indian pedagogical approaches as well as methods traditional to the academy. Marilyn Iwama and Cheryl Bartlett, working closely with Mi’kmaq Elder Albert Marshall, have recently offered an “integrative science” using a “Two-Eyed Seeing” approach that draws together the strengths of Western and Mi’kmaq knowledges (Bartlett et al., in press; Iwama et al., 2009). These researchers explain that by engaging the overlapping perspective of each “eye,” there is a guiding principle of binocularity to their integrative science that experiences a wider, deeper, and more generative “field of view” than might either of these perspectives in isolation. Similar to Donald’s “Métissage,” “Two-Eyed Seeing” emphasizes a weaving back and forth between knowledges in which each strand is necessary to the process.

Jonathan Anuik and Carmen Gillies (2012) apply Indigenous teachings to assist in the collaboration of the heart and brain because they argue that in mainstream education systems, there is a disconnect between the two and thus true or holistic learning cannot occur. They share the philosophy that “learning must enable the heart, brain, body, and spirit to collaborate to evoke an outpouring of critical thought and personal transformation” (p. 75). Kovach has also done extensive work in bringing Indigenous methodologies into the classroom and upholds the importance of creating space in the academy for Indigenous ways of knowing (2005, 2009a, 2009b, 2010). Kovach’s work offers conceptual possibilities for research that rests upon tribal perspectives, bridging Plains Cree knowledges and their methods in a manner translatable to Western research. Laara Fitznor (2005), Cree mixed heritage, incorporates traditional Aboriginal learning methods of sharing, learning and talking circles for healing, teaching, and decision-making in her courses.

One of the most notable examples of a “two-worlds” approach includes the Indigenous Environmental Studies Program (IES) at Trent University. IES is a collaborative effort between the Department of Indigenous Studies and the Environmental and Resource Science/Studies Program and is designed to give students the necessary skills and knowledge to work in the growing field of Indigenous environmental issues. The program uses Indigenous knowledge systems, Western science, and information from the social and environmental sciences to explore local, regional, national, and international environmental issues impacting Indigenous peoples (Trent University, 2011). As of the 2009-2010 calendar year, the IES program has offered a B.A. or a B.Sc. as well as a Diploma in Indigenous Environmental Studies. Trent is the first university in North America and worldwide to grant university-level degrees in Indigenous Environmental Studies. Leanne Simpson (2002), Anishinaabe and former Director of IES at Trent University, highlights the importance of the following concepts in terms of respectful and inclusive curricula: Indigenous knowledges

must be the foundation of Indigenous environmental education, Elders must be included as experts in program delivery, the programs must be grounded in Indigenous pedagogies—utilizing Indigenous epistemologies and language in their delivery, and students must have the opportunity to connect to the land in terms of “being out on the land” (p. 19).

A “two-worlds” approach to environmental education acknowledges the differences between the knowledge systems of both Indigenous and Western perspectives—it upholds tenets of both methods of learning. A crucial aspect of this approach is that it does not merge two knowledge systems together, nor does it paste bits of Indigenous knowledges onto Western curricula, rather it avoids knowledge domination and assimilation by engaging in a learning philosophy based in equitable inclusion. Both Indigenous and Western epistemologies are acknowledged in equal measure by their own terms. A crucial element involved in a “two-worlds” approach includes a fundamental requirement for teachers to animate the principle of holism, engaging mentally, emotionally, spiritually, and physically with all topics covered in a course. To engage in this new approach, it is critical to acknowledge a specific analysis of the past and the historical influence of Indigenous-settler relations on educational practices. The importance of storytelling as pedagogy and highlighting personal narratives and self-location of both students and instructors will facilitate this necessity.

Simpson (2002) also recommends that educators provide space for students’ anger and confusion between Western science and Indigenous knowledges and that this is paramount as most students will go through a transformative experience as they learn another perspective/paradigm. It has been our combined experiences teaching in post-secondary institutions that when students are introduced to Indigenous environmental perspectives, they not only become enlightened but also very angry and upset. The most repeated question we hear from our students after they have processed this new perspective is, “Why were we not taught this before?” This is symptomatic of the reality of the absence of Indigenous perspectives in the Canadian education system in general and is indicative of the continued perpetration of colonial practices.

Concurrently, however, these same students become intellectually inspired, spiritually moved, and physically prompted to learn more and/or to “do something.” They exude attitudes of awe and respect when they engage in Indigenous ways of thinking about the world that they had never experienced before. Most students have been so positively impacted by their experience of learning about Indigenous perspectives that their own lives have changed for the better. This change was highlighted through the writing exercises that we ask students to complete for our courses: students describe personal accounts of how their thinking has become more aware, inclusive, and respectful of the natural environment and their relationship with it. They passionately suggest that all “science students should know this stuff” and “should be required to take these classes.”

The amplification of difference that is upheld in terms of a “two-worlds” approach to environmental education offers a more enlightened and enriched learning experience for both Indigenous and non-Indigenous students and educators. The “two-worlds” approach creates understandings between these groups. As Ray Barnhardt and Angayluqaq Oscar Kawagley (2005) suggest, this type of pedagogical lens will support processes “to reconstitute the relationship between Indigenous peoples and the immigrant societies in which they are embedded” (p. 20). Engagement in a “two-worlds” approach to environmental education has the potential to facilitate the movement towards reconciliation between Indigenous and Western peoples, necessary for the reconstitution of a new relationship.

### *Challenges: Engaging With the Tension*

Although a “two-worlds” approach to environmental education is easily suggested as a pedagogical model, there are a plethora of practical and theoretical challenges involved in realizing this type of instruction. As Kovach (2010) suggests, “scholars have argued to include Indigenous knowledges in college and university curricula but few have addressed how teachers can effect changes in their practices to centre Indigenous knowledges and experiences” (p. 65). Some concerns are the risks of bringing cultural knowledges into Western academic spaces and the misrepresentations and/or appropriations that often accompany them. Kovach (2009a) highlights this fear: “The transformative potential for academia in welcoming diverse knowledges is significant, but at what cost to Indigenous peoples?” (p. 12). Although most mainstream educators will concur with the idea of an integration of Indigenous perspectives into their curricular practices, Lorenzo Cherubini (2009) warns that most will implement a shallow integration with an incoherent approach to Indigenous knowledges, which can result in a superficial treatment of culture and a reinforcement of stereotypes.

This problem arises out of a disconcerting reality that most teacher candidates are non-Indigenous and enter their teacher certification year lacking any knowledge of Indigenous peoples or Indigenous pedagogies (Cherubini & Hodson, 2008). Added to this reality and posing another challenge to implementing a “two-worlds” approach to environmental education is the low number of Indigenous academics available to participate in the realization of this vision. This situation is symptomatic of the lack of curriculum regarding Indigenous peoples and perspectives in current mainstream K-12 models and has been identified as a leading catalyst of poor retention of Indigenous students in educational programs (Cherubini & Hodson, 2008). Extensive studies have been conducted in terms of the processes necessary to change the reality of Indigenous peoples in public and post-secondary institutions (Cherubini, 2009; Cherubini, Kitchen, & Engemann, 2008; Haig-Brown, 2008); however, we argue that it is also the reality of non-Indigenous instructors within public education systems that requires radical change. Ermine (2007) points out that the real

challenge to Western educators is to understand and confront their own hidden interests, unconscious attitudes, and ignorant assumptions that animate Western dealings with Indigenous peoples.

A “great divide” still exists between Indigenous and Western knowledges which is then reflected or reproduced in curriculum. For example, to posit reality as a construct of interrelatedness—with a spiritual dimension—can be seen as an irrational leap to many Western educators because Western knowledge or science has largely concerned itself with the study of a physical and rational reality (Iwama et al., 2009). Honouring the interdependency of all beings in all aspects of being—spiritual, emotional, physical and mental—and surviving an academic world that privileges the ‘intellectual’ is a difficult task for the implementation of Indigenous perspectives in mainstream or Eurocentric education systems.

To meet these epistemological challenges, Hatcher and Bartlett (2010) suggest that ultimately this situation invites instructors and administrators to explore their own identities as educators. They point out that “it will take enormous courage to question how one perceives and relates to one’s own epistemic values and traditions, particularly when these ideologies are substantially different from the principles of Indigenous knowledges” (p. 14). Iwama et al. (2009) manage this divide by interweaving epistemologies and methodologies, and by accepting that “any translation is sometimes a foolish endeavour like trying to scientifically replicate the inexplicable spiritual” (p. 19). Although such epistemic divides are discouraging, the authors uphold that they are also opportunities for creativity: “refusing compromise, we seek out ways that perspectives complement each other” (p. 19).

Similarly, we find that the differences between Indigenous and Western perspectives actually do complement each other in terms of offering alternative “two-worlds” approaches and understandings in addressing a common issue. When we ask our students to write essays, we ask that they not only reference evidence that supports their arguments, but also materials that negate their theses. Many are shocked and uncomfortable as most are used to only using references that agree with their stances. We teach our students that it is important to know both sides of an argument for the benefit of a more complete view of the issue. The effect of this teaching strategy on students better prepares them to come to an understanding of the benefits of holistic learning and the acknowledgement of different worldviews in a “two-worlds” approach.

Ermine (2007) suggests that reconciling worldviews is the fundamental problem of cultural encounters: “Shifting our perspectives to recognize that the Indigenous-West encounter is about thought worlds may also remind us that frameworks or paradigms are required to reconcile these solitudes”; he advocates a “theory of ethical space” as one such framework (p. 201). He explains that the idea of an ethical space, produced by divergent perspectives of the world, entertains the notion of “engagement” which in turn stimulates a dialogue that is concerned with providing space for exploring fields of thought.

Ermine argues that the ethical space, “at the field of convergence for disparate systems, can become a refuge of possibility in cross-cultural relations” and that “the new partnership model of the ethical space, in a cooperative spirit between Indigenous peoples and Western institutions, will create new currents of thought that flow in different directions and overrun the old ways of thinking” (p. 203).

Engaging in such initiatives is not easy and is contextually multi-layered. Within the multi-layered context of working within and between two-worlds, another challenge to the implementation of this approach is the decision(s) of which Indigenous knowledges to include. Indigenous peoples are immensely diverse and thus are the knowledges they keep. As instructors of this “two-worlds” approach in courses, we would argue that there is indeed a “common veneer” among Indigenous knowledges around the world but that they are also extremely specific to the peoples and places that hold them. We strongly suggest that environmental educators begin with the Indigenous peoples and knowledges in whose territories they are situated. For example, traditional territories in Ontario include those of the Anishinaabe/Ojibwe, Haudenosaunee, Algonquin, and Cree peoples; hence, instructors should seek to include the environmental perspectives of these nations within the content of their courses. This will require relationship building between environmental educators and Indigenous peoples and is a fundamental first step in the entire process of implementing a “two-worlds” approach. As Kovach (2009a) aptly states: “In the new millennium, engagement with Indigenous knowledges means engagement with Indigenous peoples, communities, and cultures” (p. 172).

Engagement with Indigenous knowledges will require space within the academy to teach “two-worlds” approach courses. The ethical space referred to by Ermine (2007) provides a neutral location to begin this process. This ethical space is predicated upon the creation of new relationships between Indigenous and non-Indigenous peoples and rests upon what Donald (2009) calls “an ethic of historical consciousness”:

...this ethic holds that the past occurs simultaneously in the present and influences how we conceptualize the future. It requires that we see ourselves related to, and implicated in, the lives of those who have gone before us and those yet to come. It is an ethical imperative to recognize the significance of the relationships we have with others, how our histories and experiences are layered and position us in relation to each other, and how our futures as people similarly are tied together. It is also an ethical imperative to see that, despite our varied place-based-cultures and knowledge systems, we live in the world together with others and must constantly think and act with reference to these relationships. Any knowledge we gain about the world interweaves us more deeply with these relationships and gives us life. (p. 7)

Upholding an “ethic of historical consciousness” and engaging in the neutral location of “ethical space” within the academy, environmental educators can deliver curricula through a “two-worlds” pedagogical approach in a meaningful and effective way.

## *Enhanced Environmental Education: Creating Respectful Powerful Relationships*

Moving closer together through “two-worlds” teaching is undoubtedly a challenging process as shifting paradigmatic structures and the transformation in the relationships between Indigenous and non-Indigenous peoples will undoubtedly take time to unfold. Kovach’s (2009b) words are reassuring as she states: “It is not impossible for Indigenous researchers to crack open the spaces in the academy for our own way of learning...it is only hard” (p. 73). Although this process will indeed be “hard,” engaging in the tension that exists between Indigenous and Western worldviews offers positive outcomes that could have far reaching benefits for both Indigenous and non-Indigenous peoples, and, in environmental education, moves disparate knowledges and peoples closer together to offer an opportune stage for the future. This approach is inherently a decolonizing practice through which the differences between Indigenous and Western knowledges are acknowledged, highlighted, and engaged.

This pedagogical strategy has the potential to inform the next generation of environmental educators and scholars at a deeper and heightened level of understanding. Through the equal acknowledgement, engagement, and application of both Indigenous and Western knowledge systems to environmental education, a strong new relationship will emerge between Indigenous and non-Indigenous peoples. This new relationship built upon reciprocity and respect would not only offer the benefit of an enhanced and more complete understanding of the natural world, but also provide the resources and capacity to imagine collaborative solutions to address our common environmental challenges for the Earth and all of humanity, now and into the future.

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