

# Currents in Environmental Education: Mapping a Complex and Evolving Pedagogical Field

Lucie Sauvé, Université du Québec à Montréal, Canada

## **Abstract**

*The purpose of this article is to bring to light and celebrate the richness of the environmental education field, thereby paying homage to the pedagogical creativity of its architects over the course of the last thirty years, as well as to their contribution in reflecting on the meaning, problems and possibilities of our relationship to the environment, and on the role of education in this regard. A typology of the different practical and theoretical propositions is presented, in the form of 15 currents of intervention, enabling a mapping of the pedagogical landscape of environmental education. This cartography offers points of reference for critical analysis of discourses and practices in this educational field. It spreads out a rich diversity of inspiration sources for enriching programs or curricula and for conceiving appropriate strategies.*

## **Résumé**

*Cet article a pour but de mettre en lumière et de célébrer la richesse du champ de l'éducation relative à l'environnement, rendant ainsi hommage à la créativité pédagogique de ses artisans au fil des trente dernières années et à leur effort de réflexion sur le sens de notre rapport à l'environnement et sur le rôle de l'éducation à cet effet. Une typologie des différentes propositions théoriques et pratiques, sous forme de 15 courants d'intervention, permet de tracer une carte du territoire pédagogique de l'éducation relative à l'environnement et d'apprécier l'ampleur et la diversité du domaine. Cette typologie offre des repères favorisant l'analyse critique des discours et des situations éducatives; elle se déploie comme un ensemble de sources d'inspiration pour l'enrichissement des programmes ou curriculums et pour la conception de stratégies appropriées.*

An overview of the literature in the field of environmental education shows that, despite their shared concern for the environment and their recognition of the central role of education in enhancing human-environment relationships, various authors (researchers, professors, educators, facilitators, associations, organizations, etc.) adopt widely differing discourses on environmental education, and propose diverse ways of practicing educative activity in this field. Each advocates his or her own vision—we may even identify different pedagogical “chapels,” all distinct proponents of the right approach, the best program, the appropriate method. How can we orient ourselves amid such a diversity of propositions? How can we discern which voice(s) should inspire our own educational initiatives?

One strategy for addressing the multiplicity of theoretical and practical possibilities within environmental education consists of developing a map of this particular pedagogical “landscape.” This involves grouping similar propositions within categories, describing each of these groupings and distinguishing it from the others, while highlighting points of relative divergence and similarity, opposition and complementarity.

Thus may we identify and attempt to define different currents in environmental education—the notion of “current” referring here to a general way of envisioning and practicing environmental education. Each current comprises a plurality and diversity of propositions; it is not a monolithic category. Within it may be observed a variety of specific trends, or many ramifications of a same “branch.” Moreover, a single proposition (an approach, a model, a strategy, a program, an activity, etc.) may be associated with two or three different currents, according to the angle from which it is analyzed. Finally, if each current presents a set of specific characteristics which differentiates it from others, this does not imply that the various currents are mutually exclusive in every respect: some will have one or more characteristics in common, creating zones of overlap. As such, the proposed mapping of currents is intended as an analytical tool for exploring the manifold variety of pedagogical propositions, not as a classification yoke imposing a rigid and all-encompassing categorization at the risk of (de)forming reality. These currents must not be “reified.”

We will identify and briefly explore 15 currents in environmental education (Figure 1). Some have a longer history than others, having been dominant during the first decades of environmental education (the 1970s and 80s), while others correspond to more recent preoccupations. These currents may therefore be approached from a diachronic perspective—each one emerging and developing within a particular historic and macro-cultural context. However, it must also be recognized that these currents coexist today and may be studied from a synchronic point of view. The oldest currents are not outmoded: they are rooted in fundamental aspects of human-environment relationships; they have been further enriched over time. Moreover, if the “newest” currents are in tune with the times—i.e., responding to emerging concerns—if they are expanding some other pedagogical horizons, this does not mean, in essence, that they are a priori more appropriate. The merits of each current as a source of inspiration must be gauged both in terms of the particular world view it promotes and with respect to the unique characteristics of each pedagogical situation (including the objectives pursued and the context of intervention).

Among those Currents with a Longer Tradition in Environmental Education	Among those Currents more Recently Emerged in Environmental Education
1. <b>Naturalist Current</b>	8. Holistic Current
2. Conservationist/Resourcist Current	9. Bioregionalist Current
3. Problem-Solving Current	10. Praxic Current
4. Systemic Current	11. Socially Critical Current
5. Scientific Current	12. Feminist Current
6. Humanist/Mesological Current	13. Ethnographic Current
7. Value-centered Current	14. Eco-Education Current
	15. Sustainable Development/ Sustainability Current

Figure 1. Fifteen Currents in Environmental Education.

Each of these currents will be presented according to the following parameters:

- dominant conceptions of environment and education it conveys;
- primary aim of environmental education, as explicitly or implicitly expressed;
- main approaches and strategies;
- examples of activities or pedagogical models that illustrate the current, or illustrate more specific trends within it. The representativeness of such examples as regards the range of diverse propositions associated with each current is nonetheless limited. Furthermore, the choice of examples reflects elements of my own exploration of the field of environmental education, based on my culture of reference and my practical experiences; they include propositions stemming from francophone, anglophone, and latino-american contexts; and
- some questions or assertions designed to stimulate critical analysis of the advantages, limitations, and issues associated with each current.

Finally, this mapping should be viewed as a theoretical proposition in and of itself. As such, it would no doubt be beneficial to make it, too, the object of critical discussion. Naturally other such mappings, whether existing or yet to be attempted, may shed further light on the “landscape” of environmental education<sup>1</sup> and thereby complement or reconfigure its depiction.

### **1. Naturalist Current**

This current is centered on human relationships with nature. The approach may be cognitive (learning about nature) or experiential (living in nature and learning from it), or affective, or spiritual, or artistic (allying human creativity with nature’s own). The naturalist current’s propositions most often recognize the intrinsic value of nature, above and beyond the resources it provides. The tradition of the naturalist current is an ancient one, when one considers “lessons of nature” or learning through immersion or imitation in social groups

whose cultures are tightly interwoven with their relationship to natural settings. As often related, the naturalist current has been more specifically associated during the last century with the “nature education” movement and certain proposals of “outdoor education.”

The educational model developed by Steve van Matre (1990) is a well-known example of a proposition within the naturalist current. It involves inviting children (or other participants) to engage in cognitive and affective encounters in/with nature via experiential approaches and the appeal of role-playing in magical or mysterious settings, in order to promote an understanding of ecological phenomena and to encourage the development of an attachment to nature. In adult pedagogy (andragogy), Michael Cohen (1990) argues the futility of attempting to solve environmental problems without having first understood “*How Nature Works*”; we must learn to engage with nature as “sentient beings,” via our senses and other sensitive receivers. The approach is sensualist, but also spiritualist; it is about exploring the symbolic aspect of our relationship to nature and understanding that, as beings within nature, we are part of it. Also with respect to adults, Clover, Follen, & Hall (2000) highlight the importance of regarding nature as both educator and site of learning, and suggest outdoor education is one of the most effective means of learning about/within the natural world and imparting an understanding of nature’s inherent right to exist by and for itself—humankind’s place in nature being definable only in context of this ethos. The authors call for an “education designed to heal, re-connect, liberate, empower, create and celebrate” (p. 20).

Examining the following statements, gathered from “ambient” discourses within the field of environmental education, may help engage in critical discussion about the naturalist current: “*The essential starting point of environmental education lies in working towards a reconstruction of our relationship with nature*” or, conversely, “*Environmental education must be ‘denaturalized’ so as to avoid romanticism or eco-fascism.*” Also worthy of appraisal is van Matre’s (1990) assumption that (delocalized) learning in nature may in turn serve as a springboard to enhance relationships to the environment in everyday life.

## *2. Conservationist/Resourcist Current*

This current brings together propositions centered on resource “conservation,” in terms not only of quantity, but also of quality: water, soil, energy, plants (for food, medicine, fabrics, wood, etc.) and animals (also for their resource potential), the genetic pool (for its manifold possibilities), our constructed heritage, etc. Here, discussions about “conserving nature” or “conserving biodiversity” are largely centered on a conception of nature as a pool of resources. Concern for environmental “management” is a recurring theme.

Doubtless “conservation education” has always been an integral part of family or community education in settings where resources are scarce. It developed,

for instance, during wartime in the middle of the last century (the melting of old pots to make munitions being a sad example!) and at the first signs of resource depletion following the post-war economic “boom.”

The great many environmental education programs based around the now classic three R's (Reduction, Reuse, and Recycling), or those rooted in environmental management concerns (e.g., water, waste, or energy management), are all part of the conservationist/resourceist current. The accent is generally on the development of environmental management capacities, as well as ecocivism. There is a call for action through individual behaviours and collective projects. More recently, consumer education—beyond a self-centred focus on “managing one’s budget”—has more explicitly integrated environmental concerns about resource conservation, linked to issues of social equity. For example, the Belgian association COREN<sup>2</sup> defines eco-consumption as follows: “*Eco-consumption begins by asking the right questions before making a purchase.*” For example: Does this purchase correspond to a need? Is this product manufactured from renewable or recycled materials? Is it manufactured and distributed in accordance with environmental standards, ethical criteria, etc.? Does its use have detrimental effects on health or the environment?

Critical discussion of this current may arise from several angles. For instance: “How to avoid conservation education remaining instrumental?” Wolfgang Sachs (in Sachs & Esteva, 2000) also opens the following avenue of thought:

What light do we shine on things (or human beings) the moment we qualify them as “resources”? ... A resource is something that achieves its purpose only when it is transformed into something else: its own value evaporates before the claims of higher interests .... Our perception has been trained to see the lumber in a forest, the mineral in a rock, the real estate revenue in a landscape and the set of skills in a human being. What we term a resource is placed under the jurisdiction of production .... (p. 77-78, translation by author)

### *3. Problem-Solving Current*

The problem-solving current emerged in the early 70s, when the extent, gravity, and growing acceleration of environmental problems came to light. It groups together propositions in which the environment is considered first as a set of problems. This current adopts the central vision of environmental education proposed by UNESCO (1978) within the framework of its International Environmental Education Program (1975-1995). The goal is to inform or help people to inform themselves and learn about environmental issues, as well as develop the attitudes and skills for solving them. As is the case for the conservationist/resourceist current, with which the problem-solving current is frequently associated, there is a call for action, in terms of changes in individual behaviour or collective action.

One of the most significant propositions within this current is without doubt that of Harold R. Hungerford and his team (1992), who designed a pedagogical model based on the sequential development of problem-solving skills: identifying an environmental issue (comprising ecological and social aspects), investigating this issue (including analyzing the protagonists' values), diagnosing the problem, searching for solutions, evaluating and choosing the optimal ones. The actual implementation of solutions within action projects was not necessarily part of this teaching/learning model, which remains a "primer" for behavioural change and action. In contrast, with their "Action Competence" approach in environmental education, Bjarne Bruun Jensen and Karsten Schnack (1997; see also Jensen, 2004) insist on the importance of stimulating students' participation in collective democratic problem-solving action (not limited to behavioural change) as a context and core object of learning. In a more recent version of their pedagogical model, these authors introduce the idea of action for change (not limited to problem solving) and insist on the importance of developing a "vision" that gives meaning to action, thus showing some crossover with the praxic current presented in point 10.

A critical discussion of the problem-solving current could be stimulated by questions such as these: Must environmental education be fundamentally oriented towards problem-solving? Must environmental education necessarily engage learners in action projects aimed at solving a problem? Or is environmental education a preparatory phase for action? Ought we, in environmental education, to expect that students will actually resolve environmental problems, or ought we to instead teach them how to solve such problems according to Shoshana Keiny and Uri Zoller's proposition (1991)? Finally, considering the state of our world, would it be unethical to conduct environmental education without focusing on concrete problem-solving?

#### *4. Systemic Current*

For proponents of this current, a systemic approach is indispensable to proper recognition and understanding of environmental realities and problems. Systemic analysis allows for identification of the various components of an environmental situation or issue, as well as for distinguishing their interrelations, including the relations among biophysical and social elements. Such an analysis allows for the construction of a "big picture" view which corresponds to a synthesis of the reality under study. This global vision leads to a clearer perception and better understanding of the environmental system's dynamics and ruptures, as well as its evolutionary trends. The systemic current draws on, among others, the input of ecology, that transdisciplinary biophysical science which attracted increasing attention during the 70s, and whose concepts and principles inspired the field of human ecology. Here, the approach to environmental realities is cognitive by nature, and the perspective is one of enlightened decision-making. Intellectual skills relating to analysis and synthesis are especially solicited.

By way of example, pedagogical propositions within the systemic current include that of Shoshana Keiny and Moshe Shashack (1987), who argue for a “*decision-making environmental education*.” As an example, a field trip enables direct observation of a concrete environmental reality or phenomenon (such as the ruins of an ancient wine press in the desert), and the analysis of its component parts and relations, in order to develop a systemic model leading to a global understanding of the related issue (e.g. practicing sustainable agriculture in an arid climate). Such a complete vision allows for the identification and selection of more enlightened solutions; the problem-solving process may then be followed appropriately. André Giordan and Christian Souchon (1991) also promote a systemic approach to environmental realities, which they associate with interdisciplinarity. Developing systemic thought and the language of modelization enables an understanding of the complexity of studied objects and phenomena within a process of enlightened decision-making for problem-solving or environmental management.

The following questions open avenues of discussion around the systemic current: Is adopting a systemic approach a “necessary and sufficient” way to understand environmental realities? Does an “ecosystem approach” contribute something more or different to systemic thinking? Must solutions to environmental problems necessarily pass through “a reform of thinking,” that leads to an understanding of larger complexities and ultimately to a comprehensive vision of realities, as suggested by certain environmental philosophers?

### *5. Scientific Current*

Some environmental education propositions place the accent on a scientific approach, with the aim of tackling environmental realities and problems rigorously, of better understanding them and more specifically identifying their cause-and-effect relationships. The main process is the induction of observation-based hypotheses, and the verification of these hypotheses through new observation or experimentation. Environmental education is often associated here with the development of knowledge and skills in environmental sciences—an interdisciplinary and even more so, a transdisciplinary field. As in the systemic current, the approach is predominantly a cognitive one: the environment is an object of knowledge and that knowledge is necessary for more appropriate decision-making. Skills of observation and experimentation are especially solicited.

Propositions within this current include several by authors or educators whose interest in environmental education stems from concerns related to the field of science teaching, or from their fields of interest or specialization in biology, chemistry, or environmental sciences. For science teachers and science education specialists, the environmental theme can be a “hook,” a subject that stimulates an interest in sciences or one that offers a social and ethical dimension to scientific activity. The general perspective is one of better understanding in order to better orient action. Propositions within the scientific

current often integrate the systemic approach and the problem-solving process which characterize the two previously described currents.

The link between environmental education and science teaching has been the object of much ongoing debate. An examination of the following highly contrasting comments may, for example, stimulate critical discussion: *“Environmental education threatens the integrity of the disciplines. We risk draining science of its disciplinary content. If, for instance, we introduce environmental issues, we are not doing chemistry. Value education is not science!”* *“The environment is mainly a good trigger, an attractive pretext, a motivator for learning sciences.”* *“If we relegate environmental education to the teaching of sciences, it loses its meaning. It cannot suffice to impose a scientific method on the study of environmental biophysical realities, to impose a quest for THE right answer, as is the custom within sciences.”*

### *6. Humanist/Mesological Current*

This current places the accent on the human dimension of the environment, forged at the junction of nature and culture. The environment is not understood merely as a set of biophysical elements which requires only to be approached with objectivity and rigour in order to be better understood and thereby to permit better interaction. Rather, it corresponds to a place of existence, of living—a habitat—with all its historical, cultural, political, economic, emotional, and other aspects. It cannot be considered without taking into account its significance, its symbolic value. Environment as a “heritage” is not simply natural; it is also cultural. Human constructions and arrangements bear witness to an alliance between human creativity and the possibilities of nature. Architecture, among others, lies at the heart of this interaction. The environment includes the environment of the city, the public square, cultivated gardens, etc., just as it is the environment of the rural countryside, with its many diverse means of “inhabiting” the land. The term “mesology” refers here to the study of milieux of life (“meso” as in “middle” “being in a milieu”).

The point of entry for understanding the environment is often the landscape. The landscape is most often shaped by human activity; it speaks both of the evolution of the natural systems that make it up and of the socio-cultural trajectory of the human populations that have inhabited it. Such an approach to the environment is often favoured by educators interested in environmental education through the lens of geography and/or other human sciences. The approach remains a cognitive one, but over and above systematic observation, analysis, and synthesis, the humanist current appeals for sensoriality, affective sensibility, creativity.

Bernard Dehan and Josette Oberlinkels (1984) propose an intervention model characteristic of the humanist/mesological current. The first step is an exploration of the milieu of life (by itinerary, landscape reading, free and directed observation, etc.), from which emerge speculations and questions; these



give rise in turn to the conceptualization and implementation of a research project aimed at better understanding a particular aspect or specific reality of the inhabited environment, drawing on the resources that are the environment itself (to be observed once again), the inhabitants of the place (to be interviewed), documents (media, reports, essays to be analyzed) and the collective knowledge of participants in the investigation process (to be shared and discussed). According to the authors, a better understanding of the environment enables better relations with it and an ability to better intervene. Thus the first step is to construct the richest possible collective representation of the milieu of life under scrutiny. Several propositions related to “*place-based environmental education*” (as in Sobel, 2004) also include characteristics of the humanist/mesological current, the accent often being placed on developing a sense of belonging to a specific environment as a precondition for a sense of responsibility to it.

An examination of this statement may spark interesting discussions about the humanist/mesological current. *“The essential starting point of an environmental education is the appropriation or re-appropriation of our own place: Where are we? Who are we and what are we doing, here and now?”* In the same way, the following sample questions may set the stage for a further exploration of the possibilities and challenges of this current: What is the meaning of the expression “pedagogy of place” (Orr, 1992)? What role ought “culture” to play in environmental education? How about “thinking globally” in place-based environmental education?

### *7. The Value-centered Current*

Many educators assert that the foundation of our relationship to the environment is moral or ethical in nature: it is thus necessary to intervene at this level, be it as a priority or as a transversal or background concern. Indeed, all action is rooted in a set of values, which are more or less conscious and coherent among themselves. Therefore, a number of different propositions for environmental education put the emphasis on developing “environmental values.” Some encourage the adoption of environmental “morals,” prescribing a code of socially desirable behaviour (like those related to “ecocivism”), yet others attain a more fundamental level and focus on the development of a genuine “ethical competency”—the construction of one’s own value system. Not only must one be able to analyze the values of protagonists in a given situation or general social values, but also, above all, clarify one’s own values in connection with one’s actions.

As an example of a pedagogical model within this current, we may turn to that developed by Louis Iozzi (1987), which focuses on students’ moral development, in relation with the development of socio-scientific reasoning. It encourages confronting moral situations which lead to make one’s own choices, and justify them. It is via this “moral conflict”—confrontations

with situations, as well as with others' views—that moral development occurs. By contrast, among those authors concerned with the affective dimensions of the ethical process, Bob Jickling (2004) is one who encourages a deconstruction of the language of utilitarian and instrumentalist ethics characteristic of dominant rationality, and the introduction of ethics into everyday life, making room for sensual experience, sentiments, and emotions, as a way of reconnecting with the rest of the world.

What range of “environmental values” is adopted by the diverse propositions within this current? Are they truly “environmental values”? Indeed, what are “environmental values”? For each proposition, is the educational approach coherent with the chosen values? What contribution might philosophical education (or education in/about philosophy) make to environmental education? What is the link between philosophy and ethics? Between “moral education” and “education in/about ethics”? These questions, among others, may guide a critical examination of this moral/ethical current. In other respects, a substantive debate may be engaged around the following affirmation: *“Schooling must not inculcate values; it must not indoctrinate youth in a system of values”*

### *B. Holistic Current*

According to the proponents of this current, an exclusively analytic and rational approach to environmental realities is at the origin of many contemporary problems. Environmental educators must take into account not only all the diverse aspects of socio-environmental realities, but also the different dimensions of the person who enters into relation with such realities, of the globality and complexity of his or her “being in the world.” The meaning of “global” is distant from “planetary” here; rather, it means holistic, referring to the fullness of each being, each reality, in its entirety, as well as to the web of relations which connects beings with one another, and from which they draw meaning and significance.

The holistic current, like the others, does not consist of homogeneous propositions. Some, for instance, are based more on psycho-pedagogical concerns (i.e., focused on the overall development of the person in relation to his or her environment); others are founded in a real cosmology (or world vision) in which all beings are interrelated, which calls for an “organic” understanding of the world and participatory action within and with the environment.

Thus, the Belgium Institut d'Éco-pédagogie (n.d.) puts forward a holistic approach to learning about and relating to a place, from a psychopedagogical perspective. It suggests, for example, appropriating a place (such as a wooded area) through unguided, autonomous and spontaneous exploration, drawing on a variety of approaches to realities—sensorial, cognitive, affective, intuitive, creative, etc. The different domains of the “global brain” are engaged: the domain of the reasoned, the imagined, the formalized, the sensed. At another more fundamental level, Nigel Hoffmann (1994) draws inspiration

from the philosopher Heidegger and the poet-naturalist Goethe in proposing an organic approach to environmental realities. The investigation process consists not of understanding things from the outside in order to explain them, but rather of a concern, a desire for the preservation of their essential being while allowing them to reveal themselves in their own language. Allowing beings (plants, animals, rocks, landscapes, etc.) to speak by themselves of their own nature, rather than encasing them a priori in our lexicons, languages and theories, will enable us to better care for them, to merge our creative forces with theirs in the making of landscapes in which all elements (natural and constructed) grow in harmony “as in a garden.” Also of note is the contribution of Phillip Payne (1997) as one of the author/educators who emphasize the importance of taking into account “embodiment” in our relations with the environment: “the central question is how the (experiencing) body (in actions and interactions) might be used as a localized ‘site’ for understanding, explaining and acting on ‘embodied’ environmental problems, issues or matters” (p. 134). Thus is the epistemology enriched with a new dimension of subject-object relations, in connection with a “critical ecological ontology” (Payne, 1999): experiencing the environment physically, “forming one body” with, for example, the canoe and the tumultuous river that carries it, to better relate with the world and develop new forms of understanding.

What epistemological reflections does the holistic current raise? What roles might intuition and creativity play in improving or enhancing our relation to the world? What is the objective and what are the foundations and practices of education in/about/for creativity? How might this educational dimension be integrated into an environmental education initiative? What pitfalls and drifts may be associated with an uninformed or naive “holistic” approach? Here are a few avenues of reflection on the holistic current.

### *9. Bioregionalist Current*

According to Peter Berg and Raymond Dasmond (in Traina, 1995), a bioregion is a term which “refers both to geographic terrain and a terrain of consciousness—to a place and the ideas that has developed about how to live in that place” (p. 2). A bioregion may be defined by two essential characteristics:

- it is a geographic area identified more by its natural and cultural characteristics than by its political boundaries; and
- this “inhabited” area makes reference to a sense of identity on the part of the human communities that live there, in connection with knowledge of the territory and a desire to adopt ways of life that will contribute to valorization of the region’s natural community.

The bioregionalist perspective, as clarified by Marcia Nozick (1995), leads us to see a place from the point of view of natural and social systems, whose

dynamic relations contribute to creating a sense of “living place” rooted in natural as much as cultural history.

Bioregionalism grew out of, among others, the back-to-the-earth movement, towards the end of the last century, in the wake of the disillusionment of industrialization and massive urbanization. It is a socio-ecological movement, one which is particularly concerned with the economic aspect of “managing” this shared dwelling place that is the environment. Within the bioregionalist current, environmental education is aimed at developing a privileged relationship with the local or regional environment and a sense of belonging to it, as well as stimulating a commitment to valorizing this bioregion, for example through eco-development community projects. According to propositions by David Orr (1992, 1996) and Wendell Berry (1997), one must learn to re-inhabit the earth. “Mesologic education,” as defined by Michel Maldague (1987), in connection with concerns for integrated regional development, also relates to the bioregionalist current.

The pedagogical model developed by Elsa Talero and Gloria Humaña de Gauthier (1993), in Colombia, offers an example of bioregional environmental education (*educación ambiental*). Here, the school becomes the center of the community’s social and environmental development. Education is based on a participatory approach: it calls on parents and other members of the community. The first step is to engage in a re-cognizance, an exercise of relearning the place and identifying its problems or its development needs. A conception and implementation phase follows, setting in motion projects to resolve these problems from an ecological and proactive community development perspective, including economic aspects; for example, producing and processing pesticide-free fruits and using domestic compost as fertilizer. Such initiatives care for environmental health, enhance food security, and offer community income from selling quality jam at the regional market place. Each project is devised according to an ecosystem vision, as contributing to a vast overall bioregional development project. In school, it is not the formal curriculum which determines the environmental education project, but rather the environmental education pedagogical project which gives contextual meaning to the formal curriculum and enriches it.

What might be the contribution of the bioregional current to a relevant education in the contemporary context of globalization? What principles of economic education (or education in economy) would be coherent with the bioregional perspective? How might a bioregional approach be adopted in an urban environment? Such questions may contribute to a critical examination of the bioregional current within environmental education.

### 10. *Praxic Current*

This current emphasizes learning *in* action, *by* action, and *for* the ongoing improvement of action. It is not a matter of developing knowledge and

skills *beforehand*, in view of potential action, but rather of placing oneself into a situation of action and learning through, by, and for that project. Such learning calls for reflexivity throughout the project. *Praxis* essentially consists of integrating reflection and action such that they feed one another.

The foremost process within the praxic current is that of action-research, the principle aim of which is to effect change within a milieu (i.e., the environment itself as well as the people in it) through a participatory dynamic which involves the various actors of the situation to be transformed. In environmental education, the changes envisioned are both socio-environmental and educational.

William Stapp and his colleagues (1996) developed a pedagogical model illustrative of the praxic current: *Action-research for community problem solving*. It consists of engaging in a participatory initiative to resolve a socio-environmental problem perceived in the immediate surrounding area. However, beyond the usual problem-solving approach, it integrates constant reflection on the action-project undertaken: What is the meaning of this project? Are our initial goals and objectives still worthy, still adequate? Are our strategies appropriate? What are we learning from this project? What more must we learn? Is our teamwork dynamic healthy? Etc. Not only is such a project a well of learning and knowledge development, but it also enables one to learn about oneself, as well as how to work with others, collectively.

The following questions, for example, may help in examining the possibilities and challenges of action-research: Is “action-research” a hackneyed term? Is praxis truly achieved in projects generally classified as “action-research”? What strategies may be adopted to facilitate integrating reflection within an action process? What types of knowledge may action-research help to develop? Does learning in and by action necessarily imply a reflexive approach?

### 11. *Socially Critical Current*

The praxic current is often associated with that of social criticism. The latter current is inspired by the field of “critical theory,” which was previously developed within the social sciences and which entered the field of education, and subsequently—during the mid 80s—environmental education (Robottom & Hart, 1993). This current essentially promotes analysis of the social dynamics underpinning environmental realities and problems: analysis of intents, positions, arguments, explicit and implicit values, and the decisions and actions of the various protagonists in a given situation. Are the stated rationales for action coherent with the projects undertaken? Is there a rupture between words and action? Power relationships in particular are identified and denounced: Who decides what? For whom? Why? How is the relationship to the environment subjected to a dominant set of values? What is the relationship between knowledge and power? Who wields or claims to wield knowledge? To what ends?

The same questions are posed vis-à-vis educational realities and problems, whose connection to environmental issues must be made explicit: education is at once the reflection of social dynamics and the incubator of social change. Examples of critical questions include: Why does integrating environmental education in a school setting pose a problem? In what way might environmental education help to dismantle the pernicious legacy of colonialism in developing countries? According to Robottom and Hart (1993), socially critical environmental education encourages participants to enter into a research process with respect to their own practices. Special attention must be paid to the gaps between what practitioners believe they are doing and what they are doing in reality, between what they want to do and what they can do within their specific context of intervention.

The posture of social criticism, by definition political in scope, aims to transform realities. Action plans emerge from or during investigation, in a perspective of emancipation, of freedom from alienation. It is a courageous stance, in that it begins by confronting oneself (one's own beliefs, attitudes and values, the relevance and coherence of one's own actions) and implies the questioning of commonplace ideas, received "wisdom," and dominant trends.

As a contributor to the social ecology movement, Chaia Heller (2003) proposes a three-tiered critical approach: a critical phase, a phase of resistance, and a phase of reconstruction. Her proposition draws inspiration from that of social anarchism, which rejects the classic liberal precepts of individualism and competition to advance alternative values of collectivity and cooperation. To such a critical stance the author integrates a feminist viewpoint and feminist values. The educational model developed by Alzate Patiño, Castillo, Garavito, and Muñoz (1994), in Colombia, is also related to the socially critical current (although it includes numerous elements of the bioregional current). This proposition is based on a pedagogy of interdisciplinary and community-oriented projects that aim to develop critical "action-knowledge" for resolving local problems and furthering local development. It stresses the importance of addressing issues that are contextually relevant and significant to people, and highlights the fecundity of knowledge "dialogues": formal scientific knowledge, experiential knowledge, traditional knowledge, local everyday knowledge, etc. These diverse types of knowledge must be compared and contrasted, nothing must be taken for granted; diverse discourses must be appraised within a critical approach in order to better inform action. It is also necessary to clarify the rational or theoretical foundation (most often implicit or unconscious) that supports action, and to create the conditions for progressively refining a theory of action. Theory and action are tightly interwoven from a critical perspective.

Discussions about the socially critical current may stem from the following questions: What is the difference between teaching and learning critical thinking and the "critical pedagogy" inspired by critical theory? What difference is there between "political education" (or education in politics) and a "politicized

education”? How and in what way might the foundations and practices of political education and democracy education enrich environmental education? Also worthy of discussion are the following statements, presented here as examples: *“The critical current is confined within a framework of rational analysis and evaluation of realities and situations: rationality is a limited way to apprehend the world.”* *“Critical pedagogy is too often based exclusively on the analysis of power relationships.”* *“The critical current ‘deconstructs’ but does not reconstruct.”* *“This current is focused on the social aspect of our relationship to the world: it neglects the personal (subjective, idiosyncratic) aspect, just as it neglects our relationship to nature.”* *“Environmental education cannot help but be critical.”*

## 12. The Feminist Current

From the current of social criticism, the feminist current borrows the analysis and denunciation of power relationships within social groups (Di Chiro, 1987). The accent, however—in connection with power relationships in political and economic fields—is placed on the power relationships that still advantage men over women in a number of contexts, and on the need to integrate feminist viewpoints and values in areas of governance, production, consumption, and other forms of social organization. In environmental matters, the feminist current sheds light on the relations between the domination of women and the domination of nature: working to re-establish harmony with nature cannot be dissociated from a social project aiming to harmonize relations among humans and, more specifically, among men and women (Di Ciommo, 1999).

The feminist current is nevertheless opposed to the prevalence of the rational approach to environmental issues as it is most frequently observed in the theories and practices identified with the socially critical current. As is the case for the holistic approach, intuitive, affective, symbolic, spiritual, or artistic approaches to environmental realities are also valorized. From an ethics of responsibility, emphasis is placed on solicitude: taking care of other humans and those other than human, with sustained and affectionate attention.

Women are often the first environmental educators. In their homes and communities they pass along a unique understanding of the natural processes which take place around them. For centuries, women have been involved in teaching traditional medicine and health care, seed collection and the maintenance of biodiversity, farming and the processing and preservation of food, forestry and water management, skills which will become increasingly more vital as environmental destruction continues. (Clover, Follen, & Hall, 2000, p. 18)

If the initial focus of the feminist movement was on bringing to light and denouncing male-female power relationships, the current trend is more towards working collectively to rebuild harmonious relations through participation in joint projects wherein each individual’s strengths and talents are leveraged complementarily (as in Mies & Shiva, 1993). To this effect, environmental

projects offer a particularly interesting context, since they imply (to differing degrees, of course) a rebuilding of relations with the world.

From an educational perspective, Annette Greenall-Gough (1993) applies feminist criticism to the environmental education movement. She observes, among others, that insofar as the major international events that formed environmental education, there is no trace or very few traces of women's contribution. Greenall-Gough (1998) also formulates an energetic critique regarding the proposition of "sustainable development" that has insinuated, or harnessed, environmental education. Despite the call for social equity, it is associated with a world vision that sanctions the prevalence of existing power structures within our societies.

By way of example of propositions regarding environmental education which contribute to the feminist current, the intervention model developed by Clover, Follen, & Hall (2000) is noteworthy, in that it integrates a feminist component, in complementarity with naturalist, andragogic, ethnographic, and critical approaches.

Like popular education feminist adult education is also a process of "*concientización*", a term developed by Paulo Freire to signify the process in which people are not recipient but knowing subjects who achieve a deeper awareness of the socio-cultural reality that shape their lives and their own ability to transform their reality. Feminist adult educators seek to transform women by including their daily reality and experiences in the process of learning. (p. 16)

Analysis of the feminist current raises fundamental questions. For example: Is women's relationship with nature truly different from men's? Does the feminist current maintain prejudices and a segregation between men and women? What particular values does the feminist current seek to promote? And how ought we to react to the following statement: "Feminism is passé"?

### *1.3. Ethnographic Current*

The ethnographic current emphasizes the cultural dimension of environmental relationships. Environmental education should not impose a vision of the world; the culture of reference of the populations or communities must be taken into account.

The ethnocentrism that consists of taking the categories of thought of western societies as a reference has for too long enabled the designation of other cultures as lacking a political governance, lacking an economy or lacking an education. Conversely, when there is real intercultural dialogue, it produces a radical questioning of the most crucial problems facing postmodern societies .... Studying Amerindian educative structures challenges our own conception of education, centered as it is on transmitting information or know-how. Amerindian education is more like an initiatory guild focused on immersion in experience and its symbolic understanding .... Teaching and learning is inseparable from the quest



for the sacred .... Emphasis is placed on observation and active participation. Meaning is not offered a priori, rather, it emerges from the symbolic resonance revealed in the interaction between a person and an event. Every event has the potential to carry meaning—be that event a rite, an artisanal activity, the hunt, or an act of daily life. (Galvani, 2001, p. 158, translation by author)

The ethnographic current proposes not only that pedagogy should be adapted to different cultural realities, but also that inspiration be drawn from the pedagogy of these diverse cultures, which have another relationship to the environment. To that end, Thierry Pardo (2002) explores the contours, characteristics and possibilities of a certain ethnopedagogy. It is inspired by the various educational approaches and strategies adopted by “native” populations, whether they be indigenous peoples or regional communities characterized by their particular culture, their specific traditions. In his work, the author puts forward a range of strategies: exploring language through, for example, a study of toponymy, or an analytical comparison of the words various languages use to designate a same object; fables, legends, and songs; solitary immersion in a landscape; acts as models or examples, etc.

Another noteworthy example is the pedagogical model proposed by Michael J. Caduto and Joseph Bruchac (1988), centered on the use of Amerindian fables. Their model describes the development of, understanding of and appreciation for the Earth with the view of adopting responsible behaviours with respect to the environment and the human populations that form an integral part of it. The model promotes a relationship to nature founded in belonging and not in control. The child learns that he is himself, or that she is herself, part of the environment, and develops a sense of empathy for it. The main strategy consists in presenting a fable to a group of students and inviting them to explore together its symbolic universe. Subsequent activities (in a natural setting, for the most part) allow the students to experience the human-environment relationship proposed by the fable.

Following on from this example, we may, along with Thierry Pardo (2002), question the coherence between activities stemming from a “western” scholastic culture and the “ethnographic” foundations from which they are seeking to draw inspiration. What hazards and drifts may be associated with environmental education initiatives that attempt to draw on indigenous or any other “ecophilosophy”? How might these pitfalls be avoided? What might the principal contributions of the ethnographic current be to environmental education? What are the areas of linkage and divergence between intercultural education and ethnoeducation? And what could be the meaning(s) of the statement, “We are all native people”?

#### *14. Eco-education Current*

This current is dominated more by educational concerns than environmental ones. There is no question of pragmatic solving problems or “managing”

the environment, but rather of leveraging our relationship with the environment to further personal development as the basis of meaningful and responsible action. The environment is perceived here as a sphere of interaction essential to our “eco-formation” (*écoformation*) or “eco-ontogenesis.” These two propositions, while very close to one another, are nevertheless distinct, and will be treated separately.<sup>3</sup>

Gaston Pineau (2000) specifies the meaning of “eco-formation” Formation (in the sense of the German *bildung*) includes three movements—socialization, personalization, and ecologization—each corresponding to one of the three facets or angles of the formation process:

- heteroformation, which is largely dominant within our society’s educational systems. “Education comes from people, parents, peers, the educational institution” (Cottureau, 2001, p. 13);
- autoformation, meaning the process by which a subject retroacts on the emergence of its own form. It implies a person’s taking control of his or her power of formation (Galvani, 1997); and
- eco-formation, corresponding to the “subtlest, the quietest” aspect of formation, (Pineau, 2000, p. 132) and often, the most forgotten. Eco-formation is focused on the personal development that each undergoes in relation to his or her physical environment: “Everyone has experienced, from one element or another, from one place or another, a specific eco-formation, ultimately constituting his or her ecological history” (Cottureau, 2001, p. 13). The space “between” the person and his or her environment is not empty; it is there that a person’s relationship, his or her linkages with the world, are forged:

The environment forms us, deforms us and transforms us, as much, at least, as we form it, deform it, transform it. In this zone of accepted or refused reciprocity is our relationship with the world played out. In this border space-time are forged the bases of our actions towards the environment. In the interval between oneself and the other (be it a person, an animal, an object, a place, ... each faces the vital challenge of being-in-the-world .... Eco-formation is about working on being-in-the-world: being aware of what is happening between oneself and the world in the interactions which are vital both for oneself and for the world. ... Its entire problematic is bound up in linkage, in ecocodependence and in the question of the meaning each of us gives to his or her existence. (Cottureau, 1999, p. 11, translation by author)

The concept of eco-ontogenesis (genesis of the person in relation with his or her environment—*Oikos*) was advanced by Tom Berryman (2002), upon completing his work aimed at bringing forward, translating, and analyzing an entire cross-section of literature, mostly American and inspired by psychology, centered on such a process. As seen in the “eco-formation” current, Berryman emphasizes the important role of relationships with the environment in the development, the ontogenesis, of the subject. For this author, prior to the

issue of solving problems and from a perspective of fundamental education, experiences, and relationships to the environment are ultimately a central and primordial element of ontogenesis which should be considered in environmental education. To this end, he highlights the important differences in infants', children's, and adolescents' relationships with the environment and more specifically with nature, and encourages the adoption of differentiated environmental education practices vis-à-vis these subjects.

Just as other theories of human development aim to recognize periods or phases of development—let us here consider the work of Freud or Piaget—a theory of eco-ontogenesis seeks to characterize and differentiate specific periods of human development as regards interaction with the environment. It further seeks to associate with each period specific environmental education practices. ... One of the key questions raised by the eco-ontogenesis current might be as follows: In our educational practice, as much by the object of learning we privilege, as by the language we use and by the environments in which we engage in them, into what “cosmos”, into what world are we introducing children? (Berryman, 2003, p. 210, translation by author)

Thus the eco-education current invites us to consider environmental education as an essential dimension of education, which concerns our relationship with the world. It is centered on the person-environment relationship. However, the following question arises: What of the social dimension of our relationship to the environment in the propositions of eco-formation and eco-ontogenesis? As another example of questioning and discussion about this current, one may ask whether the expression “eco-education,” in a broadened, inclusive sense, might be suitable to describe any form of education dealing with relationships to the environment, thereby entering the network of terms such as eco-development, eco-feminism, eco-management, etc., and highlighting its links with political eco-logy, ecological eco-nomics, eco-centric ethics, etc.?

### *15. Sustainable Development/Sustainability Current*

The ideology of sustainable development, which gained in popularity during the mid-80s, gradually penetrated the environmental education movement and asserted itself as a dominant perspective. In its effort to respond to the recommendations contained in Chapter 36 of Agenda 21, following the Earth Summit in 1992, UNESCO replaced its International Environmental Education Program (1975-1995) by a program entitled *Educating for a Sustainable Future* (UNESCO, 1997), the goal of which is to contribute to the promotion of sustainable development. It postulates that economic development is at the basis of human development and recognizes that a “sustainable” economy is closely linked to the conservation of natural resources and the equitable sharing of resources. Learning to make rational use of today's resources is

essential if there are to be enough for everyone and enough remaining to meet the needs of future generations. Environmental education thus becomes one tool among others in the cause of sustainable development.

According to the supporters of this current, environmental education has limited itself to a naturalist approach and has neglected to encompass social preoccupations, and especially economic considerations, in the treatment of environmental questions. Education for sustainable development would permit that deficiency to be mended at last.

As early as 1992, upholders of the sustainable development ideology proposed a reform of the entire educational system for this purpose. A “new” approach to education would thus be established. A document entitled *Reshaping Education for Sustainable Development*, published by UNESCO and distributed at the Eco-Ed Congress intended as a follow-up to Chapter 36 of Agenda 21, contains passages such as the following:

The function of education in sustainable development is mainly to develop human capital and encourage technical progress, as well as fostering the cultural conditions favoring social and economic change. This is the key to creative and effective utilization of human potential and all forms of capital, ensuring rapid and more equitable economic growth while diminishing environmental impacts. Empirical evidence demonstrate that general education is positively correlated with productivity and technical progress, because it enables companies to obtain and evaluate information on new technologies and economic opportunities. (Albala-Bertrand, 1992, p. 3)

It is important to consider however that the “developmentalist” current is no more monolithic than the preceding ones. It gives rise to diverse conceptions and practices. Notable among them are those that align themselves more with the concept of sustainability. “Sustainability” is generally associated with a less economicist vision of sustainable development, in which concerns for maintaining life and social equity are more explicit.

Responding to the fundamental principle of sustainable development, education for sustainable consumption aims to contribute towards transforming methods of production and consumption, basic processes of societies’ economies. Édgar González-Gaudio (1999), however, stimulates a critical discussion by pointing to the potential inequities inherent in such an educational project:

Environmental education for sustainable consumption is mainly concerned with promoting supply information (i.e., product information concerning mode of production methods, possible environmental impacts, advertising costs, etc.) on products and with empowering the consumers’ critical capacities regarding their available options .... However nothing is said in this proposal about economic differences, poverty, income distribution and possibilities of basic needs satisfaction .... Developing and improving environmental education for sustainable consumption requires specific pedagogical strategies for ... those popular sectors which

are highly vulnerable due to their lack of competencies combined to their lack of consumption ( i.e., literacy, accessing information and services, etc.) which combines with their lower purchasing power to deny them an efficient participation in the goods and service market .... Certainly, consumer education flies right into the teeth of the gale of the corporate interest of the big producers and distributors .... But true citizenship will never exist without better informed social participation acting in defense of people's interests and aspirations .... (p. 182)

Questions that may be raised in pursuing the discussion around this current include: What similarities and differences are there between “education for sustainable development” and “education for sustainability”? Is education for sustainable development a truly “new” educational proposal? Does it correspond to a “new paradigm”? What might be the contribution of the theoretical and practical field of “sustainable development” to environmental education? Is sustainable development a political program? Should it be an educational project? What system of values does it embrace? Could we say that sustainable development education has become a hegemonic proposition? How? Why? And finally, how ought we to respond to the following statement: “Environmental education is naturalist and thus too narrow; it must be replaced by education for sustainable development, which is a comprehensive educational project”?

### Examination of the Currents' Cartography

The effort to identify and characterize currents in environmental education leads to the construction of a typology of the various ways of conceptualizing and practicing environmental education (Figure 2). Clearly, further analysis remains to be pursued in an ongoing mapping of this field. Nonetheless, this proposed systemization, while neither exhaustive nor intended as a perfect categorization, may be useful in that it highlights the diversity or range of variation in pedagogical propositions in environmental education and thereby contributes to “celebrating” the richness of this field. Projecting the spectrum of theoretical and practical possibilities allows us recognize the creative work of environmental education “actors” over the last decades, to pay homage to their contribution in reflecting on the epistemological, hermeneutic, ethical, cultural, spiritual, esthetical, political, economic and other dimensions of our relationship to the environment, and on the role of education in this regard. The intent is to bring together the profusion of theoretical constructs, of approaches and strategies, in order to create an abundant, colourful bouquet. Beyond the scope of environmental education itself, this pedagogical heritage will lend itself to an enrichment of all education.

Such a mapping may constitute a didactical tool, providing reference points and/or sources of inspiration for planning adequate educational strategies, according to the intended objectives and context of intervention. It may

also be useful for teachers' and other educators' professional development in environmental education. More than describing the various currents, it offers avenues for more profound exploration and a critical analysis of each strand of thought and practice. It allows for each one to be contrasted with the others. It enables the identification of complementary aspects, in view of a comprehensive environmental education, one which encompasses—through a range of coherent, well-orchestrated interventions—all the many diverse dimensions of our relationship to the environment. This typology may also assist educators to situate their own theoretical choices and their own practices on a map of the environmental education landscape, to analyze and enrich them if and where appropriate.

Furthermore, inventorying the present range of currents may inform the development of new propositions, inspire their foundations and strategies and enable them to be situated within the mosaic of an evolving field. Indeed, if contributions are expected and needed to continuously enrich environmental education as well as the diverse related educational fields, it is important not to “reinvent the wheel,” to naively announce “new paradigms,” “new” forms of education, each one forever presented as the “philosopher’s stone of human development”—“Some humility please ...,” as Bob Jickling (1991, p. 155) urged.

Finally, it should be recalled that “the map is not the territory.” Rarely can a specific pedagogical project or proposition be bound up in a single current. A category is no more than a particular (and limited) attempt to apprehend a reality (or some aspect of it) among others. The landscape of environmental education is far richer than this mapping can convey—and indeed the latter remains an unfinished project, one whose evolution will follow the moving and ramified trajectory of environmental education itself.

## Notes

- <sup>1</sup> Well-known examples of typologies of the various ways of conceptualizing and practicing environmental education include that advanced by Arthur Lucas (1980-81), who distinguishes among education in, by and for the environment, and that of Ian Robottom and Paul Hart (1993), who characterize the positivist, interpretative and socially critical paradigms in environmental education.
- <sup>2</sup> <http://www.coren.be/pdf/fiche03.pdf>.
- <sup>3</sup> This section is also inspired by some elements of a synthesis of the eco-formation proposition carried out by Carine Villemagne (in Sauv , 2003). The ecotogenesis proposition was conceptualized and synthesized by Tom Berryman (2002).

Current	Conception of Environment	Aims of Environmental Education	Dominant Approaches	Examples of Strategies
Naturalist	Nature	Reconstruct a link with nature.	Sensorial, Cognitive, Affective, Experiential, Creative/Aesthetic	Immersion; interpretation; Sensorial games; Discovery activities.
Conservationist/Resourcist	Resource	Adopt behaviours compatible with conservation. Develop skills related to environmental management.	Cognitive, Pragmatic	Guide or code of behaviours; 3 Rs set of activities; Environmental audit; Conservation project.
Problem-solving	Problem	Develop problem-solving skills: from diagnosis to action.	Cognitive, Pragmatic	Case study: issue analysis; Problem-solving project.
Systemic	System	Develop systemic thinking: analysis and synthesis, toward a global vision. Understand environmental realities in view of enlightened decision-making.	Cognitive	Case study: environmental system analysis; Construction of ecosystem models.
Scientific	Object of study	Acquire knowledge in environmental sciences. Develop skills related to the scientific method.	Cognitive, Experiential	Study of phenomena; Observation; Demonstration; Experimentation; Hypothetico-deductive research activity.
Humanistic/Mesological	Living Milieu	Know and appreciate one's milieu of life; better know oneself in relation to this living milieu. Develop a sense of belonging.	Sensorial, Affective, Cognitive, Experiential, Creative/Aesthetic	Itinerary; Landscape reading; Study of milieu; investigation.
Value-centred	Field of values	Adopt ecocivic behaviours. Develop a system of ethics.	Cognitive, Affective, Moral	Analysis of values; Clarification of values; Criticism of social values.
Holistic	<i>Holos, Gaia, All, The Being</i>	Develop the many dimensions of one's being in interaction with all aspects of the environment. Develop an "organic" understanding of the world and participatory action in and with the environment.	Holistic, Organic, Intuitive, Creative	Free exploration; visualization; Creative workshops; Integration of complementary strategies.

Figure 2. Characterization of Fifteen Currents in Environmental Education.

Current	Conception of Environment	Aims of Environmental Education	Dominant Approaches	Examples of Strategies
Bioregionalist	Place of belonging, Community project	Develop competencies in/for local or regional community ecodevelopment.	Cognitive, Affective, Experiential, Pragmatic, Creative	Exploration of our shared milieu; Community project; Project of local or regional ecodevelopment.
Praxic	Locus of action/reflection	Learn in, by, and for environmental action. Develop reflexive skills.	Praxic	Action-research; Reflexive posture in activities or project.
Socially Critical	Object of transformation, Place of emancipation	Deconstruct socio-environmental realities in view of transforming them and transforming people in this process.	Praxic, Reflexive, Dialogic	Analysis of discourses; Case study, Debate, Action-research.
Feminist	Object of solicitude	Integrate feminist values into the human-environment relationship.	Intuitive, Affective, Symbolic, Spiritual, Creative/Aesthetic	Case study, Immersion, Creative workshop, Communication & exchange activity.
Ethnographic	Territory, Place of identity, Nature/culture	Recognize the close link between nature and culture. Clarify one's own cosmology. Valorize the cultural dimension of one's relationship with the environment.	Experiential, intuitive, Affective, Symbolic, Spiritual, Creative/Aesthetic	Fables, Stories and legends; Case study; Immersion; Modelling; Mentoring.
Eco-Education	Role of interaction for personal development, Locus of identity construction	Experience the environment to experience oneself and to develop in and through it. Construct one's relationship with the "other-than-human world".	Experiential, Sensorial, Intuitive, Affective, Symbolic, Creative	Life story; Immersion; Exploration; Games; Introspection; Sensitive listening; Subjective/objective <i>alter-nance</i> .
Sustainable Development/ Sustainability	Resource for economic development, Shared resource for sustainable living	Promote economic development that takes care of social equity and ecological sustainability; Contribute to such development.	Pragmatic, Cognitive	Case study; Social marketing; Sustainable consumption activities; Sustainable living management project.

Figure 2 continued. Characterization of Fifteen Currents in Environmental Education.



## Acknowledgements

This article is a shorter and revised version of the following publication: Sauv , L. (2005). Una cartografia de corrientes en educaci n ambiental [A map of currents in environmental education]. In M. Sato & I. Carvalho (Eds.), *A Pesquisa em Educa o Ambiental: Cartografias de uma Identidade Narrativa em Forma o*. Porto Alegre: Artmed.

## Notes on Contributor

**Lucie Sauv ** is Professor at the Faculty of Education of the Universit  du Qu bec   Montr al (UQAM) and chairholder of the Canada Research Chair in Environmental Education. She is director of UQAM's postgraduate program in environmental education and chief editor of the international research journal * ducation relative   l'environnement - Regards, Recherches, R flexions*.

## References

- Albala-Bertrand, L. (1992). *Reshaping education towards sustainable development* Paris: United Nations Educational, Scientific and Cultural Organization (UNESCO).
- Alzate Pati o, A., Castillo, L.A., Garavito, B.A., & Mu oz, P. (1994). *Propuesta pedag gica para el desarrollo local ambiental. Una estrategia en construcci n* [A pedagogical proposal for local development: A strategy in construction]. Colombia: Planeta Rica.
- Belgium Institut d' co-p dagogie. (n.d.). *Recettes et non-recettes. Carnet de l' co-p dagogie*. Li ge: Institut d' co-p dagogie.
- Berry, W. (1997). *Unsettling of America: Culture and agriculture*. San Francisco: Sierra Club.
- Berryman, T. (2002). * co-ontogen se et  ducation : Les relations   l'environnement dans le d veloppement humain et leur prise en compte en  ducation relative   l'environnement durant la petite enfance, l'enfance et l'adolescence*. M moire de ma trise, Facult  d' ducation, Montr al: Universit  du Qu bec   Montr al.
- Berryman, T. (2003). L' co-ontogen se : Les relations   l'environnement dans le d veloppement humain – d'autres rapports au monde pour d'autres d veloppements. * ducation relative   l'environnement. Regards – Recherches – R flexions*, 4, 207-228.
- Caduto, M. J. & Bruchac, J. (1988). *Keepers of the earth: Native American stories and environmental activities for children*. Golden, CO: Fulcrum Inc.
- Clover, D.E., Follen, S., & Hall, B. (2000). *The nature of transformation: Environmental adult education*. Toronto: Ontario Institute for Studies in Education/University of Toronto.
- Cohen, M. (1990). *Connecting with nature. Creating moments that let earth teach*. Eugene, OR: Michael Cohen, World Peace University.
- Cottreau, D. (1999). *Chemins de l'imaginaire. P dagogie de l'imaginaire et  ducation   l'environnement*. La Caunette: Babio.
- Cottreau, D. (2001). Pour une formation  cologique. Compl mentarit  des logiques de formation. * ducation Permanente*, 148, 57-67.

- Dehan, B. & Oberlinkels, J. (1984). *École et milieu de vie – Partenaires éducatifs – Une pédagogie de projets interdisciplinaires*. Cladesh (France): Centre interdisciplinaire de recherche et d'applications pour le développement d'une éducation en milieu de vie (CIRADEM).
- Di Chiro, G. (1987). Environmental education and the question of gender: A feminist critique. In I. Robottom (Ed.), *Environmental education: Practice and possibility*. ECT 339 Environmental Education, Geelong: Deakin University.
- Di Ciommo, R.C. (1999). *Ecofeminismo e educação ambiental* [Ecofeminism and environmental education]. Uberaba: Editora da Universidade de Uberaba/Sao Paulo: Conesul.
- Galvani, P. (2001). Éducation et formation dans les cultures amérindiennes. *Question: "Éducation et sagesse. Quête de sens."* 123, 157-185.
- Galvani, P. (1997). *Quête de sens. Anthropologie du blason et de l'autoformation*. Paris/Montréal: L'Harmattan.
- Giordan, A. & Souchon, C. (1991). *Une éducation pour l'environnement*. Collection André Giordan & Jean-Louis Martinand, "Guides pratiques." Nice: Les Z'Éditions.
- González-Gaudio, E. (1999). Environmental education and sustainable consumption: The case of Mexico. *Canadian Journal of Environmental Education*, 4, 176-187.
- Greenall-Gough, A. (1993). *Founders in environmental education*. Geelong: Deakin University Press.
- Greenall-Gough, A. (1998). *Education and the environment: Policy, trends and the problems of marginalisation*. Victoria, Australia: Australian Council for Educational Research.
- Heller, C. (2003). *Désir, nature et société: L'écologie sociale au quotidien*. Montréal: Les Éditions Écosociété.
- Hoffmann, N. (1994). Beyond constructivism: A Goethean approach to environmental education. *Australian Journal of Environmental Education*, 10, 71-90.
- Hungerford, H.R., Litherland, R.A., Peyton, R.B., Ramzey, J.M., Tomara, A.M. & Volk, T. (1992). *Investigating and evaluating environmental issues and actions: Skill development modules*. Champlain, IL: Stipes Publishing Company.
- Iozzi, L. (1987). *Science-technology-society: Preparing for tomorrow's world*. Teacher's Guide. Longmount: Sopris West.
- Jensen, B. (2004) Environmental and health education viewed from an action-oriented perspective: A case from Denmark. *Journal of Curriculum Studies*, 36(4), 405-425.
- Jensen, B. & Schnack, K. (1997). The action competence approach in environmental education. *Environmental Education Research*, 3(2), 163-178.
- Jickling, B. (1991). Environmental education, problem solving, and some humility please. *Trumpeter*, 8(3), 153-155.
- Jickling, B. (2004). Making ethics an everyday activity: How can we reduce the barriers? *Canadian Journal of Environmental Education*, 9, 11-26.
- Keiny, S. & Shashack, M. (1987). Educational model for environmental cognition development. *International Journal of Science Education*, 9(4), 449-458.
- Keiny, S. & Zoller, U. (Eds.). (1991). *Conceptual issues in environmental education*. New York: Peter Lang.
- Lucas, A. (1980-81). The role of science education in education for the environment. *Journal of Environmental Education*, 12(2), 32-37.

- Maldague, M. (1987). Observations sur l'éducation relative à l'environnement au Québec. *De toute urgence*, 18(2), 135-158.
- Mies, M. & Shiva, V. (1993). *Ecofeminism*. London: Zed Books.
- Nozick, M. (1995). *Entre nous: Rebâtir nos communautés*. Montréal: Écosociété.
- Orr, D. (1992). *Ecological literacy: Education and the transition to a postmodern world*. Albany: State University of New York Press.
- Orr, D. (1996). Re-ruralizing education. In W. Vitek & W. Jackson (Eds.), *Rooted in the land: Essays on community and place* (pp. 226- 234). London: Yale University Press.
- Pardo, T. (2002). *Héritages buissonniers. Éléments d'ethnopédagogie pour l'éducation relative à l'environnement*. La Caunette: Babio.
- Payne, P. (1997). Embodiment and environmental education. *Environmental Education Research*, 3(2), 133-153.
- Payne, P. (1999). Postmodern Challenges and Modern Horizons: éducation "for being for the environment." *Environmental Education Research*, 5(1), 5-34.
- Pineau, G. (2000). *Temporalités en formation. Vers de nouveaux synchroniseurs*. Paris: Anthropos.
- Robottom, I. & Hart, P. (1993). *Research in environmental education: Engaging the debate*. Geelong, Australia: Deakin University Press.
- Sachs, W. (2000). Le développement: Une idéologie en ruine. In W. Sachs & G. Esteva (Eds.), *Des ruines du développement* (pp. 13-81). Montréal: Écosociété.
- Sauvé, L. (2003). *Courants et modèles d'interventions en éducation relative à l'environnement*. Module 5. Programme d'études supérieures – Formation en éducation relative à l'environnement – Francophonie internationale. Montréal: Les Publications ERE-UQAM, Université du Québec à Montréal – Collectif ERE-Francophonie.
- Sobel, D. (2004). *Place-based education*. Great Barrington, MA: The Orion Society.
- Stapp, W.B., Wals, A.E.J., & Stankorb, S.L. (1996). *Environmental education for empowerment: Action research and community problem solving*. Dubuque, IW: Kendall/Hunt.
- Talero de Husain, E. & Humaña de Gauthier, G. (1993). *Educación ambiental – Capacitación de docentes de básica primaria* [Environmental education: A primary school teacher training program]. Bogota (Colombia): Ministerio de Agricultura, Instituto Nacional de los Recursos Naturales Renovables y del Ambiente.
- Traina, F. (1995). What is bioregionalism. In F. Traina & S. Darley-Hill (Eds.), *Perspectives in bioregional education* (pp. 1-12). Troy: North American Association for Environmental Education.
- UNESCO. (1978). *Final report. Intergovernmental conference on environmental education*. Tbilissi (URSS), Oct. 14-26, 1977, Paris: UNESCO.
- UNESCO. (1997). *Educating for a sustainable future. A transdisciplinary vision for concerted action*. Paris: UNESCO.
- van Matre, S. (1990). *Earth education: A new beginning*. Warrenville, IL: The Institute for Earth Education.