

# Starting Points: Questions of Quality in Environmental Education

*Paul Hart, University of Regina, Bob Jickling, Yukon College, & Richard Kool, B.C. Parks, Canada*

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## Abstract

What does good education look like? Despite recent attempts to develop standards for educational subjects and cross-curricular areas such as environmental education, there remains the question about whether rhetoric can influence practice. In this paper we suggest that rather than establish normative criteria, it may be more fruitful to find ways to engage teachers in critical reflection about their own practice and thinking. So, we have constructed a series of questions to create conditions for such reflection. The intent is not to close the reflective process with established criteria but to raise questions as a means of opening the dialogue. Thus engaged, we hope practitioners and theorists can take this dialogue in directions which are meaningful to them. We thus encourage praxis which evolves as the critical thinking about environmental education evolves through discussion and debate.

## Résumé

Quelles sont les qualités d'une bonne éducation? En dépit de récentes tentatives d'établir des normes pour les sujets scolaires et les domaines pluridisciplinaires, tels que l'éducation relative à l'environnement, la question demeure si la rhétorique peut influencer la pratique. Dans cette communication, plutôt que d'établir des critères normatifs, nous suggérons qu'il serait peut-être plus fructueux de trouver des façons d'engager les enseignants dans une réflexion critique sur leurs propres pratique et pensée. Par conséquent, nous avons préparé une série de questions pour créer les conditions propices à cette réflexion. L'intention n'est pas de freiner le processus de réflexion avec des critères établis, mais de soulever des questions pour amorcer le dialogue. Ainsi, nous espérons que les praticiens et les théoriciens orienteront le dialogue sur des

sujets qui sont significatifs pour eux. Nous favorisons donc une praxie qui progresse grâce à une réflexion critique sur l'éducation relative à l'environnement par le biais de discussions et de débats.

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In directing the activities of the young, society determines its own future . . . . (John Dewey, 1996, p. 41)

In the last years of the 20<sup>th</sup> century the world is facing a variety of crises, including the progressive deterioration of the environment worldwide. There is no doubt that the increasing scope of human activity has caused major alterations to land-cover, to animal and plant populations and biodiversity, to atmospheric gas composition, and to the quality of water bodies. Human activity has created new products that will be present on the earth for millennia. Some of these alterations are irreversible: species made extinct will not come back. Some of the changes are reversible within modest time frames: some forests will regrow, some water bodies will flush themselves. And, some of the changes will only be cured through longer time frames: chloroflourocarbons will slowly decay in the upper atmosphere. These changes are not random and independent but threads in a whole cloth, says David Orr (1994). The fact that we see them as disconnected or fail to see them at all is evidence of a failure in education.

There is an urgency for all citizens to understand what is happening to the worldwide environment, why it is happening, and how we know it is happening. We also need to know who is benefiting from the activities which bring about environmental degradation, what is being done to make them accountable for their decisions, and what can be done to prevent degradation of the earth's systems. The quest to find modes of human activity that align with nature's ability to provide for our needs and to remove our wastes must be one of the most urgent quests of our time. We need to learn how we can live well in a place. This need to learn affords educational value to environmental education.

People know generally that things such as the cod crisis in Atlantic Canada or the loss of salmon spawning areas due to poor forestry practices aren't right, but they are confused by conflicting views and don't know how to deal with these contradictions. Environmental education can involve itself with the task of trying to help citizens, young and old, explore their own questions. Along with questions about human activities and environmental dilemmas, educators can provide young people with the experience of being in natural places, of feeling the earth as it is without human alteration.

In our country, and perhaps others, the experience of place is critical to environmental education (Chawla, 1994; Hart, 1979). How will people learn about these things? One significant way, given the present reality of education in Canada, is through schools and environmental education programs.

Education, however, is a messy business; it is not precise at a conceptual level and requires constant reflection and examination on the part of practitioners. Therefore, a framework that claims to offer suggestions about educational activities cannot be narrowly prescriptive. In a new field like environmental education, where so much still is contentious, we would be skating on thin ice indeed were we to try and lay out for all time the criteria for good environmental education. However, because much of the current debate about educational standards is driven by the belief that we must prepare youth only to compete effectively in the global economy (Saul, 1995; Barlow & Robertson, 1994; Orr, 1994) some statements about alternative ends are needed (Postman, 1995). This may help foster the debate created by the recent development by the North American Association for Environmental Education (NAAEE) of standards for environmental education (See for example Wals & van der Leij, 1997a, b; Roth, 1997; McClaren, 1997; Crozier & von Frenckell, 1997; Jickling, 1995).

In developing a tentative starting point for environmental education programs and activities, we have had to consider the role of many documents crafted during the past two decades. Environmental education is a young field and there are contesting views about which directions it should or will take in the near future. We believe that these decisions must be dynamic and not succumb to limited thinking and limited possibilities. For example, contemporary areas of environmental examination such as environmental philosophy or eco-feminism are not mentioned in early documents from Belgrade or Tbilisi (UNESCO-UNEP, 1978, 1976). Nor are they addressed in educational terms within Agenda 21 (UNCED, 1992). As environmental education changes, the way we look at these and many other aspects of this field, and its practices, will change. Thus, we see the need for a document that will reflect a perspective that welcomes new and contesting views as a means of improving our thought and practice.

Messy or not, contentious or not, practitioners must decide what kind of education is needed if they are to care about the environment (Stevenson, 1987). So, we, as practitioners, have to assume some responsibility for laying out our sense of what might guide quality environmental education. We have to act; we have to create learning opportunities. We also need to help our colleagues, and ourselves as we develop learning

activities, implement environmental education programs, and reflect on our theories about education. We need articulate what we understand about what constitutes quality in each of these areas, if for no other reason than to have others articulate their own ideas.

Often, educational guidelines are prescriptive documents that lay out a means by which teachers can plan programs, prepare lessons, and develop learning materials without any necessity for examining their own educational philosophy. This lack of engagement often translates into lack of ownership of the program and consequently lack of commitment. Ironically, this separation of “knower” from what is “being known” is a conception that many environmental educators work to critique, as we seek to reestablish the relationship between theory and practice. Traditional education guidelines promote this separation: this document may, we hope, act as a catalyst to expose a dialectic.

We encourage educators using this document to reflect upon the questions that are asked of environmental education programs and learning materials, and then to try to use their experience and thought as a vehicle for better understanding their own intentions and their own practices. We want to help educators develop stepping stones that can be used to reflect on their practices, but not a single path that would tend to close down options.

We recognize that there are no universal solutions and that environmental education has to live in a state of uncertainty and indeterminacy regarding its core concepts and strategies. In fact we see this as a strength not a weakness. Thus, this document must be seen as something that is alive, that allows the introduction of novel ideas, that can anticipate change and even encourage it. It does not seek to close, systematize, or limit discourse although some may see it this way. Through questions, we want to engage educators in discussion and debate about their own theories, programs and learning materials. Thus, the following discussion criteria appear as *questions* in order to reflect their tentative nature and the fact that a detailed description of standards and boundaries for criteria cannot be rigidly established in a field which continues to evolve.

### **What Does *Good Education* Look Like?**

One of the challenges for educators is that education is itself a difficult idea. Not only has it developed and changed over time, its meaning changes across a range of cultural and historical contexts (see Jickling, 1997). Attempting to find a true definition of education is inconsistent with the

idea that education is “flexible, permissive, uncertain, vision-dependent to the extent of being incommensurable in its variants, and, even an idea for each of us to make up his or her own mind about” (Walsh, 1993, p. 80-81).

While education is a flexible and often contested concept, this does not mean that we should abandon attempts to understand the idea. Our ability to communicate at all, depends on shared understandings, or characteristics, of the words we use. Despite the postmodern concern for such endeavors, we cannot, therefore, shy away from attempts to understand what these common understandings might be. For example, we might propose that “education,” and hence “environmental education,” involves knowing, breadth and depth of understanding, and an ability to apply new knowledge in understanding and judging issues that are important in a person’s life. These understandings might be juxtaposed against indoctrination, coercion, or conditioning.

In tentatively advancing educational characteristics, we invite critique, participation, and debate. Certainly some teachers might wish to delete some of these items and add ones of their own, others may prefer a different approach. What we are trying to create is a *process* for reflecting on the nature and practice of environmental education and possibly finding some level of shared understanding. In this way, we are seeking some common stepping stones that will allow for thoughtful environmental education now while, at the same time, inviting educators to take an active role in shaping the future, the evolution of their field.

The description of “good education” is something that must be addressed by all educators. In recognition of this, we present an opening series of questions, which may contribute to an educator’s formulation of education. Ultimately, however, the educator will determine which questions are most useful in helping to reflect on her/his own values and to shape her/his own theories about environmental education. Readers are thus invited to consider the following:

*Does environmental education lead students to . . .*

- think critically and creatively and reason carefully?
- explore how attitudes are shaped through physical, social, and political contexts?
- inquire systematically into an important matter (to the student), a real-world problem, or a real issue?
- analyze, synthesize, and evaluate information and arguments?
- weigh and evaluate their own values and the perspectives of others?
- make independent decisions?

- communicate effectively to a variety of audiences in a variety of forms?
- co-operate with, and respect others, regardless of differences? (Derived from the B.C. Ministry of Education, 1995, *Environmental Concepts in the Classroom*; Gough, 1997; Jickling, 1997; Jickling & Spork, 1998)

## How Does Environmental Education Relate to Good Education?

Environmental education has been described as:

the preparation of people for their lives as members of the biosphere. It is learning to understand, appreciate, work with, and sustain environmental systems in their totality. (Meadows, 1989, p. 5)

In a B.C. government document, we find that:

Environmental education is a way of understanding environments, and how humans are part of, and influence, environments. (B.C. Ministry of Education, 1995, *Environmental Concepts in the Classroom*, p. 5)

While these descriptions are interesting, they should not be taken as definitive. Nevertheless, they do strongly suggest that environmental education is more than science education. And, if environmental education is consistent with the sentiments expressed in these references, it will be interdisciplinary, participatory, critical, community-based, values-based, and inquiry-based. Achieving such aims will require environmental education to reach far beyond its traditional roots within science, outdoor, and conservation education.

This point was recognized in the British Columbia Ministry of Education's document *Environmental Concepts in the Classroom* (1995). In this document, environmental education has been described having interests in four areas. Again these areas are not definitive, but they do provide opportunities, or stepping stones, for expanding possibilities in environmental education. The reader is invited to consider the B.C. framework:

### *Understandings about complex systems*

Complexity is a key feature of the natural environment. However, humans also create very complex political, economic, and social systems. Environmental education needs to involve the analysis of complex systems. Understanding the links between the complex natural and human systems is of utmost importance.

### *Understandings of history in an environmental context*

All societies travel on a path through time, and the study of history allows students to understand how these paths have been traveled by a variety of cultures. Looking at how different societies have acted in relation to their environment, and understanding the outcomes of those actions, appears to be an important component of the knowledge of an environmentally educated citizen.

### *Understandings of environmental philosophy & ethics*

Where do our values come from? How have we become who we are? Environmental education must explore the philosophical premises of dominant, or dominating, cultures and provide means for engaging in their critique. For Canadians, and many others, this means examining a phenomenon often referred to as “Western Culture.” But this is not all. Many readers live within a rich cultural mosaic complete with contesting values, beliefs, and visions for the future. Environmental education must foster the knowledge and abilities required for identifying, understanding, and evaluating these contesting positions. This knowledge and ability is important to make sense of the present situation, to be able to understand the perspectives represented in our diverse cultural context, and to make decisions for the future. New and emerging perspectives can also be examined and critiqued.

### *Understandings of environmental aesthetics and spirituality*

Spiritual and aesthetic understandings also challenge environmental educators to reach beyond science-based approaches to this field. These understandings include intuition, insight, deep familiarity, respect, compassion, and appreciation and perception of the sacred in the world. Aesthetic understandings, especially in a natural context, appear to be of great importance to environmental citizenship.

So, within these complex and incomplete notions of the meanings of environmental education we might ask:

*Does environmental education lead students to . . .*

- explore scientific, philosophical, aesthetic, historical, tacit/practical, and spiritual understanding?
- experience wild spaces and special places in urban or rural settings?

- examine values which underlie human and/or society-environment relationships? And, consider alternative worldviews and different cultural perspectives?
- examine, clarify, and weigh their own values and those of others?
- examine the relationships between human quality of life and environmental quality?
- treat critical global and local issues as parts of interrelated systems which exist within social and historical contexts?
- identify both personal and systemic changes that may be desirable and/or necessary?
- feel positive about contributing to solutions to environmental problems (as opposed to feeling indifferent, alienated or hopeless)?
- realize that humans can act collectively to shape society? (Derived from the B.C. Ministry of Education, 1995, *Environmental Concepts in the Classroom*; Gough, 1997; Jickling 1997; Jickling & Spork, 1998)

*Does environmental education encourage teachers to . . .*

- build complete purposeful and comprehensive programs/units or does it promote isolated experiences that do not fit into overall program goals?
- consider the global environmental/societal picture and the connections of this learning resource to the global context?

The B.C. Framework described above may provide useful stepping stones for teachers wishing to reach beyond many contemporary approaches to environmental education. In this regard, it encourages teachers to move into new, or more controversial areas of inquiry—it gives them reasons, for example, to explore philosophical and ethical dimensions of environmental issues. As useful as this is, this framework does privilege traditional western disciplinary organizations.

This Western approach to knowledge—separated into component parts and assigned to different disciplines—is contrasted with traditional modes of knowing in which the ethical dimension is given its due emphasis. This contrast is revealed from a First Nations perspective in Louise Profeit-LeBlanc’s explanation of the Northern Tutchone term *tle an oh* (klee-ah-no). A difficult term to translate, it is said to mean something like, “correctly true,” “responsibly true,” “true to what you believe in,” “what is good for you and the community,” and “rings true for everybody’s well being” (in Cheney, 1999, p. 151). Here we have evidence of an epistemological framework which has an inherently ethical dimension. Put



another way by Carol Geddes, “We would never have a subject called environmental ethics; it is simply part of the story” (1996, p. 32).

This leads to further questions:

*Can environmental educators . . .*

- find ways to speak collectively of science and philosophy in ways that does not result in one dimension of this collective understanding being privileged at the expense of another?
- find ways of learning and knowing in which fact and value can “co-arise”—ways to integrate cultural and historical contexts with science and its philosophical underpinnings.

### **Environmental Education, Controversial Issues and Indoctrination**

Controversial issues abound within environmental education. This is as it should be; there are a great many unknowns that we are dealing with, and many issues which do not have scientific or technical solutions. Teachers are rightly concerned when engaging students in activities which may involve value positions that clash. Inherent in teaching about controversial issues are some risks; it requires great care to ensure that we are not promulgating our own views or privileging the ideologies of others (see Scott & Oulton, 1998).

While we acknowledge that education is not value-free, this does not negate attempts to use a balanced and fair-minded approach in selection and presentation of environmental issues. Failure to do so can easily lead down the slippery slope to indoctrination. One critic of this problem suggests that education and indoctrination can be:

distinguished by their aims; the educator is trying to turn children into adults; the indoctrinator is trying to make them into perpetual children. . . . The educator is waiting and hoping all the time for those who he [or she] is educating to start thinking; and none of the thoughts that may occur to them are labeled “dangerous” *a priori*. The indoctrinator, on the other hand, is watching for signs of trouble, and ready to intervene to suppress it when it appears. . . . (Hare, 1973, p. 123-124)

We can avoid indoctrinating, coercing or leading students if we acknowledge that our goal is to encourage open-minded critique and analysis of both facts and values. Students should be prepared to examine any environmental conception or policy, including the most contemporary and seemingly “enlightened.”

An environmental education program which presents controversial issues as if solutions can be derived from “facts” is also problematic. Teachers should be alert to propagandizing or indoctrinating tendencies in such material. In this case, indoctrination is considered to be teaching about controversial beliefs as though they are based on discernible, or testable, truths .

Arguments in favour of employing controversial issues within environmental education include:

- engaging students in real-life issues that are important to them,
- learning to engage in dialogue across differences,
- examining controversial issues prepares students, and ourselves, to become better citizens fully engaged in democratic processes—as Mitchell Thomashow (1989) says, “Controversy is the cornerstone of democracy,”
- enabling students to understand arguments, identify assumptions, open their minds to alternative world views, engage them in cultural criticisms, and examine ideologies which underlie human-environment relationships . . . .

To avoid controversial issues is to tell students that those issues aren’t important and that the students can’t make a difference. We also risk in failing to prepare them to participate in a democratic society.

However, when dealing with controversial issues it is particularly important to scrutinize our programs carefully. As we reflect on our plans, and as we review learning materials that may assist our teaching about controversial issues, we may consider:

*Does the environmental education plan or the learning material . . .*

- scapegoat and assign blame to others when no justification exists to do so?
- use an *ad hominem* strategy, making unfair judgments based on who said something rather than on the content or quality of what was said?
- use a straw person approach, creating a caricature of a person or group in order to marginalize or discredit?
- force an either-or tactic, insisting that there are only a few possibilities for an answer when there in fact may be many?
- use slogans or leading statements which may be intended to damage credibility, encourage hostility, or create a false impression of someone’s position?

- use false analogies which do not really relate to the issue at hand?
- use extreme examples to prove a point, to slant an argument or support a prejudice? (Adapted from Clarke, 1993)

### **Does Environmental Education Need to Deal With “Environmental Problems”?**

We often think about controversial issues as being about problems, but there are always deeper questions to be examined when we look at such issues (Jickling, 1991). There are some problems that are amenable to technological solutions: however, we also have to be aware that many problems have no such solutions (Hardin, 1968). As the Australian philosopher John Passmore has written, “an ecological problem is not, in the first place, the same thing as a problem of ecology” (1974, p. 43). While we might think we are really solving problems, we should be aware that rarely will student actions “solve” problems. And we have to be careful that we don’t approach these “problems” as if they might have only one solution, or only one way of looking at them.

The questions below, derived from an article by Uri Zoller (1991), may help readers in thinking about environmental issues/problems:

*Does the environmental program or activity . . .*

- expose students to existing “real world” environmentally oriented socio-techno-political issues/problems?
- include environmentally-oriented issues/problems from the students’ immediate context and which have a particular relevance and meaning to the participants?
- use contemporary “hot” environmental issues and/or case studies?
- integrate relevant “hot” scientific and/or technological controversies?
- encourage participation in on-going research projects and social activities?
- give emphasis to self-study, self-inquiry, and independent projects and simulations concerning the environment and/or ecologically-related issues which leads students’ investigations beyond the classroom?
- use an open-ended, problem solving approach in devising class work, homework and examinations?

## Environmental Education and Action

The place of student action projects in environmental education has long been a point of contention. Yet there seems to be something about becoming involved in environmental education that says to many of us, if we are going to study the environment and the human impacts on it, we ought to do something.

If, as educators, we don't mention action—acting on what your learning has told you—we are telling students that acting on our knowledge, understanding and feelings is not important. An environmental education teacher often walks a tightrope between social criticism leading to action and the norms of society. We have to ask ourselves whether student action is an aim of the educational endeavour, or is it a consequence of student learning? And, can we ask students to engage in social action if we, the educators, do not act as well? Consider the following questions:

*Does the environmental program or activity . . .*

- invite the student to participate in real-world issues?
- leave the learners free to decide upon and select the problem they feel is important to research and address with action?
- provide a basic set of “action processes,” which includes:

-identifying, researching, and investigating the issue / problem,

-developing leadership and group organization abilities,

-developing communication, presentation and lobbying abilities

(e.g., letter writing, phone calling, public speaking),

-developing conflict resolution abilities,

-determining support and opposition to the solution and selecting appropriate methods, strategies, and tactics for implementing action—  
“force field” analysis,

-understanding alternative strategies; learning how to sustain and continue projects? (Derived from Hammond, 1998; see also McClaren, Fulton, & McMahan, 1995)

### What Would Good Teaching/Learning Materials Look Like?

E. F. Schumacher, in his widely read book *Small is Beautiful* (1973), observes that in spite of widespread belief that education is the key to resolution of our problems, and in spite of vast amounts of energy and resources devoted-

ed to education, Western civilization remains in a state of permanent crisis. While some may think that it is overstated to suggest we live in a state of permanent crisis, it is easy, following Schumacher's observations, to find examples of crisis-inspired or issue-driven forms of education. Consider, for example: conservation education, peace education, global education, development education, and AIDS education. Within our field we have seen much talk about "education for sustainable development" and "sustainability." At more local and specific levels we have examples of mining curricula (Burke & Walker, n.d.), biodiversity curricula (Binder, Guy, & Penn, 1995), and curricula in support of nuclear energy (Atomic Energy of Canada Limited, 1984; Staniforth, Mogensen, Simpson, & Kimmel, 1996) to name a few.

Educators are at some risk of becoming pawns in a struggle between contesting messages. If education is seen as key to the resolution of an issue, then the various proponents feel compelled to inject their perspective, or their message, into the educational milieu. The result is a plethora of advocacy oriented documents and curricula which are presented as educational aids. For teachers, a challenge will be to find ways to screen out unacceptable materials while carefully using others in ways that do not plant uncritical and subliminal corporate/advocate messages into their programs. We are reminded that:

When dealing with environmental and socio-scientific issues, few "right" answers exist, and students must be provided opportunities to exercise critical thinking skills; they must be able to identify central issues, recognize underlying assumptions, and critically evaluate evidence. They must be able to recognize stereotypes and bias; identify essential, verifiable, and adequate data; and draw meaningful, well-thought-out conclusions. (Bateson, Erickson, Gaskell, & Wideen, 1991, p. 76)

If there are few "right" answers and if curricula are inevitably value-laden, then educators often find themselves in a tough spot trying to decide which learning materials are acceptable.

Among those educators who have recognized for some time that no curricula can be value free is curriculum theorist Elliot Eisner (1985). He has also provided a framework that can be used to critique educational materials. Eisner's framework, used as a critical tool, can provide a basis for accepting or rejecting curricula and other teaching/learning materials, or for using curricula and other teaching/learning materials in a thoughtful and analytical way. We invite readers to consider how this framework can be used as a basis for examining social assumptions, making more informed judgments, and helping to justify our decisions.

Eisner (1985) describes what he calls the three curricula that can be found in all schools and learning materials. These include: the explicit curriculum, the implicit curriculum, and the null curriculum.

### *The explicit curriculum*

This refers to the stated curriculum defined by the outlined goals and objectives of the program, laying out what the intended outcomes of the learning resource is. This curriculum is generally reinforced throughout the guide and reflected in the evaluation of student learning.

### *Regarding the teaching/learning materials . . .*

- what is the nature of the stated goals and learning objectives? Are they interdisciplinary, participatory, critical, community-based, and inquiry-based?
- are the goals clearly stated?
- are they addressed by the materials?
- are the goals really within the scope of environmental education—are they, in fact, educational?

### *The implicit curriculum*

This refers to the “hidden curriculum” or the curriculum that is not openly stated but is required or indicated through the way the curriculum is presented. For example, a very detailed, highly structured program with tight time allotments implies that both teachers and students need a lot of direction and control, and that learning is best accomplished in a regulated environment. The amount of scope for decision-making, for student-teacher interactions, for criticism, may all be elements of the implicit curriculum.

### *Regarding the teaching/learning materials . . .*

- what are the unstated goals? what is the hidden curriculum?
- what values are implicit in the contents, illustrations, graphics, etc.?
- how do the stated or unstated goals relate to the aims of the sponsor or developer?
- again, are these implicit goals really within the scope of environmental education?
- are the teaching strategies consistent with achieving these goals?
- can the resource accomplish its claims, and are the goals appropriate for the targeted audience?

### *The null curriculum*

This curriculum is defined by what is not said, discussed, or included. Often it reflects basic political decisions made during the process of curriculum development. What is not said often tells more about a curriculum than what is said.

*Regarding the teaching/learning materials . . .*

- what points of view are not considered or are marginalized?
- what conventional wisdom is not challenged?
- where are the silences about issues related to race, gender, culture, environment, and so forth?

*Regarding educator and the teaching/learning materials . . .*

- how critical is the role of the educator?
- what specialized education does the educator need in order to facilitate the goals of the resource?
- what are the learning consequences if the resource is used as intended or not used as intended?

*Regarding educator and the pedagogical soundness of the teaching/learning materials . . .*

- have the materials been field-tested?
- are the field-test sites noted in the information?
- are contacts for information about field-testing given?
- do the activities captivate, motivate, and respect the learner?
- is it educative, or does it advocate a particular view to the exclusion of any other views, or attempt to initiate the student into a particular set of social norms?

### **How and What Do We Know—Content/Knowledge?**

We can only begin to open questions about the nature of learning and knowing. As a starting point, however, learning is, for many, an active process in which learners construct new ideas or concepts based upon their current and past knowledge. The learner selects and transforms information, constructs questions, and makes decisions.

What we know, and how we come to know it, are important epistemological issues for environmental education. Knowledge is not neutral, but is embedded in cultural contexts and in our personal experience. As educators, we can either present knowledge as closed and complete, or as open and subject to critical examination. Part of the definitional problem in environmental education is a failure to adequately consider pedagogical and methodological issues in this field and the role of the learner.

When we examine environmental education learning resources, we have to look for possible problems of content accuracy including: outdated information, factual errors, improper use of statistics, inaccurate graphs or displays, invalid or oversimplified models, examples or simulations, errors in spelling or grammar. These “bread and butter” issues are issues of credibility.

*Regarding the teaching/learning materials . . .*

- are the sources of information accurate, up to date and properly referenced?
- what or who is the source of authority that defines the information or argument put forward? How are their claims justified?
- what is the public accessibility and accountability to these authoritative claims?
- are the data provided for examining issues both adequate and essential?
- how can the data be verified by the students or teacher?
- to what degree is the information over-simplified for the development of the targeted age group?

*Regarding the learner . . .*

- are the content and processes appropriate to the developmental maturity of the audience?
- are the data accessible to the learners?
- are the learners treated as passive recipients of knowledge or active participants in the construction of meaning and understanding?

### **A Matter of Perspective? Or a Matter of Bias?**

It is clear that what we write reveals, embedded within the text, a great deal about who we are as people and as educators. We must be clear about the positions we take when making and using learning materials. When we are



not aware of our perspective, we are victims of our own ideology or bias, unable to recognize the validity of other points of view.

*Do the teaching/learning materials:*

- interpret issues in favour of a particular perspective,
- downplay information which supports alternative, or diverse, perspectives,
- claim validity and truth without quantifying or qualifying the level of validity for arguments or information,
- provide inaccurate information, or
- leave out information required for a critical perspective—bias by omission.

Notwithstanding, the above comments, biased or slanted learning resources may fairly be provided to meet specific curriculum objectives, for example, to reveal assumptions held within particular sectors of society, or to recognize propaganda and its purpose in a given context, or to balance an argument. However, teachers are responsible for making these pedagogical decisions explicit to students and, as necessary, their parents.

As we review teaching and learning materials, we can ask questions:

*Regarding the perspective(s) of the teaching/learning materials . . .*

- do they clearly state their perspective(s)?
- do they allow for one of two, several, or many perspectives?
- are various perspectives fairly represented, in their own terms, or are some perspectives provided only as interpretations by the authors?
- do the learning materials reflect the perspectives of the sponsors? Or, authors? Is there a potential conflict of interest?

*Regarding the diversity of perspectives represented in the teaching/learning materials . . .*

- is a sufficient range of perspectives presented in order to fairly understand an issue and to act with environmental responsibility on this issue?
- are alternative materials available to ensure that a full range of perspectives can be brought before the learners?
- is the audience sufficiently able (developmentally / age-wise), or prepared, to deal with this range of issues.

*Regarding bias in the teaching/learning materials . . .*

- is bias shown? If so, what types of bias are shown? And are they acceptable?
- do they claim to be balanced—to present a reasonable range of perspectives?
- do the materials provide argument or evidence in support of the presentation of a particular perspective?
- is oversimplification of an issue the result of bias?

### **Finale**

There is no doubt that more needs to be written about the development of learning resources in environmental education. Other attempts to bring together a synthesis have been created, the major one being that of the North American Association for Environmental Education. But we wonder whether standards are the answer or whether they create a larger problem. And, as we reflect on what we have presented in this paper, we wonder whether we have not fallen into our own trap. Have we, despite our best intentions, created an orthodoxy for inquiry within environmental education? We are certain that we will hear from teachers and critical friends about our work and what they see behind this work that we are unable to see at this moment.

So, we encourage you and your associates to be critical of this document, to use it as a point of debate about purposes and methods and to let us know how it can be improved, based on your own experiences.

### **Notes on Contributors**

**Paul Hart** is a professor of science and environmental education at the University of Regina and he has been a regular contributor to journals in these fields. His current research interests are in the areas of teacher thinking and practice in environmental education, children's ideas about the environment, and in the relationship between theory and practice within environmental education research.

**Bob Jickling** teaches environmental philosophy and environmental education at Yukon College. His research interests include examining relationships between environmental philosophy and education and in the practical realization of these relationships. A long-time Yukon resident, much of his passion is derived from experiences as part of this northern landscape.

**Richard Kool** has been involved in the educational world as a secondary school science and environmental education teacher, college and university instructor, educator/interpreter/programmer at the Royal British Columbia Museum and educator within the B.C. Ministry of Environment, Lands and Parks. Extracurricular activities involve trying to make sense of his children's ever-changing lives and playing Irish music on his recorder.

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