Educating For Sustainable Development: A Foundation Document

by Jim Petrie, Participant in the NB Education for Sustainable Development Working
Group

What do people understand by sustainability / sustainable development?

In order to create "a culture of sustainability," one must first understand the current
public perception and support for the term. A recent study, *The Sustainability Poll 2006*,
researched and written by McAllister Opinion Research, offers some insight into the
popular mindset. According to the poll, 17% of Canadians were able to say, when asked,
what sustainable development means. There were, however, encouraging findings.
While they may not understand initially, Canadians are enthusiastic about the concept
once it is explained and there is strong support for integrating sustainable principles into
all disciplines.

The research also provided some key considerations in any effort to create a "culture of
sustainability." First, since lack of knowledge results in people feeling that they are
unable to make a difference, we need to tell positive stories in simple language that
identify the benefits of sustainable practices and policies. People need to hear about
solutions that others have obtained. The corollary of this principle is that we should
avoid describing sustainable development in terms of the sacrifices required of people but
rather in terms of the benefits that may accrue. It is important too that the benefits be
described in concrete terms that are relevant to people's daily lives. Secondly, the
research discovered that in exploring the meaning or possible advantages of sustainable
development, images are much more effective that words. Thirdly, the entry point for
introducing the concept of sustainable development is the environment. This takes
advantage of the growing concern among Canadians for the environment and allows us to
introduce the economic and social "legs" in due course. Finally, given the low
understanding of the concept of sustainable development, we should avoid using the term
in whatever "message" we might construct.

**What are the advantages and disadvantages of not providing a definition of
sustainable development?**

One might argue, however, with considerable legitimacy, that, if a group of people,
representing varied interests and backgrounds, is to collectively promote a culture of
sustainable development, they need to share some common understanding of what is
meant by sustainable development. Without such an understanding, one risks the
possibility of individual members of that group speaking on behalf of the group or
undertaking measures in the name of the group that others would find contrary to or
inimical to what others perceived as the group's purpose. Those who would argue for
avoiding the semantic battles that often accompany any effort to arrive at a group
definition of sustainable development suggest that because sustainable development
represents a process of change that is shaped by local contexts, needs, and interests, a
single definition is an obstacle to action. This organic approach to the issue of definition,

it is argued, allows different groups to interpret a vague definition in a manner that supports and advances their particular agenda. Daly (1991) suggested,

> *"Lack of a precise definition of the term sustainable development is not all bad. It has allowed a considerable consensus to evolve in support of the idea that it is both morally and economically wrong to treat the world as a business in liquidation."*

Such an approach, it will be admitted, also allows for the possibility that certain groups, who's interest is business as usual, will exploit the vagueness of the definition to their advantage.

What are the differences among the concepts of sustainable development, a sustainable future, and a sustainable world?

Part of the problem with any effort to define sustainable development is that we are not agreed as to whether it is a goal, a principle, or an end. The original and perhaps most accepted definition of sustainable development is provided by the Brundtland Commission:

> *"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."*

[The World Commission on Environment and Development (the Brundtland Commission) report Our Common Future. Oxford: Oxford University Press, 1987.]

Those who have difficulty with the phase sustainable development argue that development implies growth and therefore a continuation of the current trajectory. Such a trajectory, they argue, will of necessity lead to an exploitation of the earth's resources that is unsustainable. Those who support the definition arrived at by the Bruntland Commission respond that a world in which large numbers of people do not have the basic requirements of life (the developing world) is unsustainable and that development is required to address these inequities. Defenders of the Brundtland Commission definition also note that the definition refers to "needs" and not "wants" and therefore recognizes the limitations of growth. They would further argue that the definition invokes the idea of trans-generational rights and therefore unrestricted growth today is unacceptable because it would ignore our obligation to future generations.

The Bruntland view is often illustrated by reference to the following diagram:

ECONOMY

QUALITY OF LIFE

ENVIRONMENT

HUMAN HEALTH & WELL-BEING
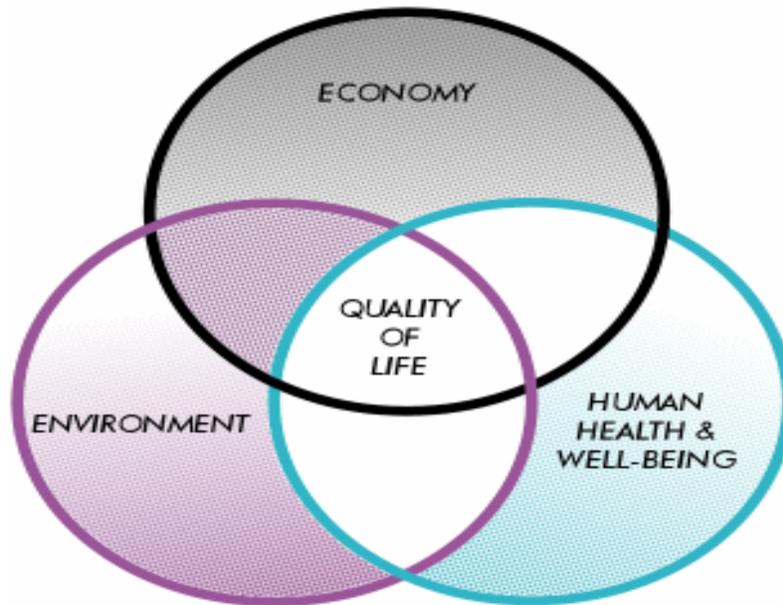
Diagrams or symbols are useful in providing a mental image that serve to illustrate the central components of a concept. In this case, the diagram illustrates that the goal of sustainable development is to reconcile economic, environmental, and social imperatives. While not acceptable to all – some would argue that this emphasis on balance ignores the primacy of the environment - others would suggest that the separation of the economic from the social is artificial; and still others would add another circle to represent the political sphere. Nonetheless, the diagram is a useful mental image for educational purposes. A further strength of the image is that it recognizes and underlines the interdependent nature of and interplay among these three spheres and promotes the system thinking necessary to deal with the challenge of building a sustainable world.

The terms sustainable future and sustainable world seeks to avoid the controversy inherent in the use of the term development and the implied pre-eminence of the economic component. To others, it is regarded as simply a new label that glosses over the apparent contradictions in the term sustainable development and its stated goal of sustainability is criticized as being a minimalist aim that hardly serves as a rallying cry for the action required to set new directions.

Should we focus on a definition of sustainable development or on identifying the principles of sustainable development?

Giving the limitations of any definition, one might argue for a dialogue that focuses on the principles of sustainability rather than a definition. Attention to principles has the added advantage of allowing the various players to take the measure of their policies and actions by determining to what extent those policies and actions are in keeping with the principles articulated. The Ontario Round Table, for example, outlined six principles:

1. Anticipating and preventing problems is better than trying to react and fix them after they occur;

2. Accounting must reflect all long-term environmental and economic costs, not just those of the current market;
3. The best decisions are those based on sound, accurate, and up-to-date information;
4. We must live off the interest our environment provides and not destroy its capital base;
5. The quality of social and economic development must take precedence over quantity; and
6. We must respect nature and the rights of future generations.

The United Nations at the Rio Conference outlined 27 principles that set out the obligations of States. Individual states and industries have used the Rio document to develop unique lists of principles designed to guide their policies and to provide a measuring stick against which their actions may be judged. The Australian government focuses on three principles it believes are necessary to understanding sustainable development: intergenerational equity, the precautionary approach, and biodiversity conservation. Together these approaches "aim to prevent and reverse adverse impacts of economic and social activities on the ecosystem, while continuing to allow the sustainable, equitable development of societies." Hydro-Quebec, on the other hand, has proposed sixteen principles which are based on the Rio principles and designed to reflect the goals of sustainable development.

What is the language of sustainable development?

Sustainable development has created or borrowed a lexicon that serves to reflect the assumptions and goals of its adherents. The following are likely to be included in any pocket dictionary on sustainable development.

- Carrying capacity: Carrying capacity recognizes that there are limits to growth, the resources of the planet are not infinite, and that increased consumption and growing population represents challenges to that carrying capacity.
- Ecological footprint: The phrase "ecological footprint" is a metaphor used to depict the amount of land and water area a human population would hypothetically need to provide the resources required to support itself and to absorb its wastes, given prevailing technology.
- Equity: Equity refers to the need to create a more equitable world that challenges the present unsustainable arrangement that sees 20% of the world's population consume 80% of the world's resources.
- Intergenerational rights: Intergenerational rights reminds us of our obligation to adopt an ethic that ensures that future generations will have available the resources required to meet their needs.
- Human Development Index / Quality of Life Index / Genuine Progress Indicator: The Human Development Index (HDI) is a comparative measure of life expectancy, literacy, education, and standards of living for countries worldwide. It is a standard means of measuring well-being, especially child welfare. Quality of Life indices are arrived at by attention to such factors as literacy rates, infant mortality, life expectancy, environmental health, freedom, etc. The Genuine Progress Indicator (GPI) is promoted by the Suzuki Foundation as a means of

measuring how well we are doing as individuals, families, communities, and as provinces using 51 economic, social, and environmental indicators. Each of these indices challenges the traditional use of Gross National Product (GNP) as a means of measuring development.

- Natural Capital: Natural capital refers to the resources available for development. Those who support sustainable development argue that we need to live off the "interest" of our natural capital rather than draw down on the capital itself.
- Full Cost Accounting: Full cost accounting means accounting for the economic, environmental, land use, human health, social, and heritage costs and benefits of a particular action or decision.
- Precautionary Principle: Precautionary principle means that when an activity raises threats to human health or the environment, precautionary measures should be taken even if some cause-and- effect relationships are not fully established scientifically.
- Ecosystem Based Management: Ecosystem based management refers to management that promotes the coexistence of healthy, fully-functioning ecosystems and human communities such that component species and ecological processes can be sustained.

What is the place of humane education within the context of education for sustainable development?

While humane education enjoys a long pedigree, it was only in the 1980s that an alliance between environmental education and humane education began to be debated. Humane education goes beyond animal rights education in asking what should be the relationship between human and non-human species. The humane school challenges what it regards as the anthropocentric attitudes that, writes Cindy Milburn, "encourage exploitation of each other, animals and the world to the point where we are now threatening our very survival on this planet," and proceeds to equates this "species-ism" with racism. The national Association for Humane and Environmental Education identifies three elements as central to humane education:

(1) assist children in developing compassion, a sense of justice, and a respect for the value of all living things;
(2) provide the knowledge and understanding necessary for children to behave according to these principles; and
(3) foster a sense of responsibility on the part of children to affirm and to act upon their personal beliefs.

The current literature on education for sustainable development does not address the issues raised by humane education and confines itself to promoting biodiversity and the integrity of ecosystems. At the moment it would appear that humane education as defined here is not part of the mainstream discussion on education for sustainable development.

Who does what with respect to the formal, non-formal, and informal components of educating for sustainable development?

For the purposes of this paper, formal education refers to the public education (K-12) system and post-secondary or what happens in the classroom. To achieve the goals of educating for sustainable development, it is necessary to ensure that the curriculum provides an opportunity for students to acquire the knowledge, skills, and attitudes that will be part of the context in which they make decisions. A whole-school approach to educating for sustainability would see the principles of sustainability applied to school governance, resource management within the school, the school's physical surroundings, and the networks and partnerships that the school might develop. Other key ingredients of a formal education system that embraces education for sustainable development would include attention to the teacher education process, the identification of appropriate teaching resources, and provisions for professional development or in-service to assist practicing teachers in integrating education for sustainable development into the classroom.

The non-formal education sector refers to non-government organizations (NGOs) or not-for-profit organizations, many of which have a mandate to promote sustainable development and who have on–the-ground experience in trying to create more sustainable societies in the developing world. This experience allows the NGOs to put a face on development and makes them a rich resource in the classroom and in the development of appropriate learning resources. Such organizations include the Canadian Network for Environmental Education and Communication (EECOM), Learning for a Sustainable Future (LSF), Green Street, the Pembina Institute, the World Wildlife Federation (WWF), and Ducks Unlimited.

The in-formal sector refers to the many organizations (Boy Scouts, Senior Citizen groups, Rotary Clubs) that are part of civil society and whose reach into the community provides an opportunity to raise the awareness and influence the behavior of its citizens. Any program aimed at creating a culture of sustainability would be well-advised to take advantage of the potential of such institutions. The informal sector may also refer to the media, to the books we read, our personal contacts, and experiences we have in our daily lives.

Are we educating "for" or "about" sustainable development?

Considerable ink has been spilled in debating the relative merits of educating "for'' or 'about" sustainable development. Educating for sustainable development, according to its critics, implies indoctrination or proselytizing rather than education. It suggests that the public must be persuaded or coerced to adopt a pre-ordained agenda, or that the intent is to make people behave in a certain way and therefore is more akin to training than education. Those who would defend education for sustainability note that we have no difficulty in educating for democracy or citizenship and that education *about* sustainable development does not carry with it the urgency or imperative needed to address the challenges faced by the planet and its inhabitants.

What are the curriculum concepts central to educating for sustainable development*?*

While any list of concepts may vary from one jurisdiction to another, the following list - found in *Educating for a Sustainable Future: A National Environmental Education Statement*, developed by the Australian Government's Department of the Environment and Heritage – identifies many of the concepts one may expect to find in any list.

Ecological Sustainability	Social sustainability	Economic sustainability
Biodiversity	Basic human needs	Cost-benefit analysis
Habitat	Cultural diversity	Economic development
Carrying capacity	Cultural heritage	Eco-efficiency
Conservation	Human rights	Life-cycle analysis
Ecological footprint	Intergenerational equity	Natural resource accounting
Ecology	Participation	Steady-state economy
Eco-space	Social justice	Sustainable consumption
Interspecies equity	Risk management	Sustainable production
Ecosystems	Peace	Triple bottom line
Natural cycles and systems		

What are the knowledge, skills, and attitudes associated with education for sustainable development?

Again, while any exercise aimed at generating a list of the understandings, skills, and values associated with education for sustainability will create a degree of debate, the following list borrowed from *Educating for a Sustainable Future: A National Environmental Education Statement* may serve as a starting point for any discussion.

Knowledge and understandings
This includes an understanding of:
• The nature and function of ecological, social, economic and political systems and how they are interrelated;
• The natural and cultural values intrinsic to the environment;
• The impact of people on environments and how the environment shapes human activities;
• The ways different cultures view the importance of sacredness in the environment;
• The role of cultural, socioeconomic and political systems in environmental decision making;
• The principles of ecologically sustainable development;
• The responsibilities and benefits of environmental citizenship, including the conservation and protection of environmental values;
• The importance of respecting and conserving indigenous knowledge and cultural heritage; and
• How knowledge is uncertain and may change over time, and why we, therefore, need to exercise caution in all our interactions with the environment.

Skills and capabilities
The ability to engage in:
• Explorations of the many dimensions of the environment using all of their senses;
• Observations and recording of information, ideas, and feelings about the environment;
• Identification and assessment of environmental issues;
• Critical and creative thinking about environmental challenges and opportunities;
• Consideration and prediction of the consequences (social, cultural, economic, and ecological) of possible courses of action;
• Oral, written, and graphic communication of environmental issues and solutions to others;
• Cooperation and negotiation to resolve conflicts that arise over environmental issues; and
• Individual and collective action to support desirable outcomes.

Attitudes and values
These are reflected in an appreciation and commitment to:
• Respecting and caring for life in all its diversity;
• Conserving and managing resources in ways that are fair to present and future generations; and
• Building democratic societies that are just, sustainable, participatory and peaceful

Is there a pedagogy that is inherent in education for sustainable development?

While many documents claim that education for sustainability implies a certain pedagogical approach, an examination of that pedagogy suggests that what is being proposed is central to good teaching in any context. Most lists would include attention to an interdisciplinary approach, the promotion of system thinking, critical thinking, problem solving, experiential learning, and an issues or case study approach. This latter is particularly relevant for education for sustainability since it avoids the discussion of sustainable development in the abstract in favour of an approach where students may look at a particular subject such as forestry or fishing or urban development and investigate to what extent the principles of sustainable development are being practiced or ignored.

Another of the strengths of the case study approach to education for sustainable development is that it provides a perfect vehicle for the use of simulations in the classroom. The use of simulations or role–playing is a most effective classroom strategy, as it allows students to explore the complexities of selected issues (i.e., the interaction of environmental, economic and social forces), identify the competing perspectives that are at play, analyze the various options for resolving the issue and explore the potential consequences of each option. A typical simulation requires the students to come to a resolution of the selected issue and the process of arriving at some conclusion provides a context in which to introduce students to the process of consensus building. The simulation approach thereby strikes an effective balance in giving attention to both knowledge and skills.

A sub-set of the case study approach is described as place–based education. This approach encourages student examination of local issues to explore the concept of sustainable development. Place–based education provides an immediacy and relevancy that tends to heighten student interest and involvement. It has the added possible advantage of building relationships between the school and local community and may lead to joint action to the issue investigated. This approach is also in keeping with the growing attention to citizenship education, which is increasingly at the core of social studies education.

There is also a growing constituency for youth-focused or youth-directed education, wherein the students assume a degree of responsibility in deciding what issues to pursue and what action to take as a result of the increased understanding that flows from the study of selected issues. This approach may be viewed as a corollary of or complement to place-based education.

Many schools have also found it effective to organize their curricular, co-curricular, and extra-curricular efforts around what is being described as green school initiatives. There is some evidence that making the environment the organizing theme or concept around which student learning takes place may produce better results then the fragmented curriculum approach that characterizes most education today. The Bruntland Schools in Quebec and Ontario's Green Schools provide examples of this approach.

It should be noted that one need not choose from the above pedagogical approaches since they tend to complement each other and therefore a combination or blending of these options is quite possible.

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Earth Charter
http://www.earthcharter.org

Education for Sustainable Development Toolkit
http://www.esdtoolkit.org/

Educating for a Sustainable Future
http://www.deh.gov.au/education/publications/sustainable-future.html

Suzuki Foundation. 2006. *Toward a National Sustainable Development Strategy: Putting Canada on the Road to Sustainable Development Within a Generation* 2006
http://www.davidsuzuki.org/WOL/Publications.asp

The Sustainability Poll 2006: Quantitative analysis interviews with 560 Canadian thought leaders and 2,500 members of the public (To obtain a copy, email info@sustain.we.ca.)

Web Resources
Teaching and Learning About a Sustainable Future (UNESCO Site)
http://www.unesco.org/education/tlsf/

The International Institute fore Sustainable Development (IISD)
http://iisd1.iisd.ca/sd/

World Resources Institute (WRI)
http://www.wri.org

Learning for a Sustainable Future (LSF)
http://www.schoolnet.ca/future

Sustainable Education
http://www.urbanoptions.org/

Green Teacher
http://www.greenteacher.ca

The Sustainability Education Guide
http://www.sustainabilityed.org

Local Agenda 21
http://www.gdrc.org/uem.la21.html

Green Street
http://www.green-street.ca

Teaching for a Sustainable World
http://www.deh.gov.au/education/publications/tsw/index.html

Sustainability Education Handbook: Resources for K-12 teachers
http://www.urbanoptions.org/SustainEdHandbook/index.htm