
Sustainability and learning: what role for the curriculum?

By Professor William Scott

**This is the text of the inaugural lecture of
Professor William Scott PhD FRSA,
given on 25 April 2002 at the University of Bath.
An inaugural lecture marks the conferring
of the status of professor.**

**Council for Environmental Education in association
with the Centre for Research in Education and the
Environment, University of Bath**

Professor William Scott is Director of the Centre for Research in Education and the Environment at the University of Bath.

Tel 01225 826 648

Email edswah@bath.ac.uk

Published by the Council for Environmental Education in association with the Centre for Research in Education and the Environment, University of Bath.

August 2002

ISBN 0 906711 41 X

Design by Global Edit (www.globaledit.co.uk)

Printed by Severnprint, Gloucester, on paper containing 100% UK fibre made totally from post-consumer waste.

Issued as a supplement to CEE's CEEview newsletter, September 2002.

Further copies available price £5.00 from:

Council for Environmental Education

94 London Street

Reading RG1 4SJ

Tel 0118 950 2550

Fax 0118 959 1955

Email enquiries@cee.org.uk

Website www.cee.org.uk

The text of the lecture is also available online at www.bath.ac.uk/cee

This document has been developed in accordance with *Supporting sustainable development through educational resources: a voluntary code of practice*.

Sustainability and Learning: what role for the curriculum?

Professor William Scott ¹

Summary

The lecture examines arguments for sustainable development and explores their implications for learning. The curriculum can help prepare for the learning that will be needed over time by individuals and institutions, both as a resource for living and further learning. Different groups use ideas about sustainability to argue for particular learning and social goals. However, although we need education to help us understand sustainability, because our knowledge of the natural environment is imperfect and characterised by risk, there are problems in using educational interventions as levers for particular forms of social change. Although there can be no single way of learning about sustainability, it is argued that there are strong grounds for working through subject teaching. The lecture ends by arguing that, because civil society is crucial to achieving sustainability, it is in all our interests that schools and teachers become openly engaged in the issues and arguments. ²

I'm going to talk tonight about sustainability and learning. I intend to examine the arguments for sustainable development, and explore the implications that these have for learning. I shall then raise some critical questions about the role the school curriculum can have in preparing for the learning that will be needed over time – by both individuals and institutions as a resource for both living and further learning. I will draw on my own work and that of colleagues, as well as invoking the support of authorities as diverse as Wordsworth, Gaia and Gershwin ³.

Definitions and qualifications

Explores definitions, meanings and conceptualisations, and argues that sustainable development might helpfully be viewed as a process through which we can (if we choose) learn to build our capacity to live more sustainably. Examines the contested nature of ideas and data from different perspectives.

I might, of course, have said sustainable development and learning – and perhaps I should have. After all, the English national curriculum and Unesco use this phrase, as do many other agencies and institutions – and Andrew Dobson ⁴ reports finding over 300 definitions, with some, at least, being used as competing rhetorical currencies in a market for whose worldviews will best save the planet. But perhaps there are good economic reasons for my using sustainability in the title. It is, after all, one word instead of two; it has six syllables instead of eight, and uses 14 characters rather than 23. Just think of all the time, ink and paper that might be saved; enough, perhaps, even to rescue the planet.

The literature, however, shows a clear distinction in meanings with sustainability as a goal and sustainable development as a process. The Brundtland Commission ⁵ stressed that sustainable development is a process of change with the future in mind:

“A process where the exploitation of resources, the orientation of technological development and institutional change, are made consistent with future as well as present needs.”

Hamm and Muttagi, in their book on sustainable development and the future of cities ⁶, put it like this:

“Sustainability is not a concept referring to some static paradise, but rather a capacity of human beings to continuously adapt to their non-human environments by means of social organisation.”

These see sustainable development as a process through which we shall need to learn to live more in tune with the environment. But, it is not enough to say that sustainable development and learning need to go hand in hand. Rather, it is crucial to recognise that sustainable development will not be taking place

where learning is not happening. To put this another way: Sustainable development is a learning process through which we can (if we choose) learn to build our capacity to live more sustainably.

Note that there's little emphasis here on teaching. This is for two reasons: the first is that much of the learning we shall need to do will be beyond the school, college, and university system; it will be learning in, between and by institutions, organisations and communities – where most of our learning goes on anyway. The second is that as we don't yet know what exactly we shall need to learn in relation to sustainable development, it's hard to know in detail what needs to be taught – except, perhaps, how to learn.

Hamm and Muttagi⁷ make a crucial distinction, however:

“Sustainable development is essentially not about the environment, but rather about the capacity of human society to enact permanent reform in order to safeguard the delicate balance between humans and their natural life-support system.”

Gary Harvey said much the same thing in his 1976 PhD thesis:

“Environmental Education is the process of developing an environmentally literate, competent, and dedicated citizenry which actively strives to resolve values conflicts in the human-environment relationship, in a manner which is ecologically and humanistically sound, in order to reach the superordinate goal of a homeostasis between quality of life and quality of environment.”

Each of these ideas is concerned with building capacity – building our capacity to live, and our capacity to learn.

Whether you believe that our current ability to adapt existing modes of social organisation to the environment is poorly developed will depend, in part, on your ideological persuasion and in part on whether you have an interest in doing so. The Board of Greenpeace and the Bush Cabinet have every reason to disagree publicly on such issues – no matter what individual members might actually think. Whether we believe it will also depend on how sceptical or credulous we are about statistics and mathematical models, and on our perspective on nature.

The rationale for our needing to change existing modes of social organisation will be well known to you. It comes from a number of social, economic and environmental concerns, among which are:

- catastrophic climate change
- species loss, deforestation, vanishing fish stocks
- over-population, malnutrition, premature death
- polluted air and water
- diminishing natural resources

None of these issues is straightforward. As expressed here, all are contested. So, if we are to learn about such issues, and learn how to learn about them, we need to get a conceptual purchase on sustainable development. This is one way of viewing the issue:



This is common sense in many ways: after all, the academy, institutions and employment are conceived in this way, and we have:

sociology, sociologists, social policy, social workers, social problems . . .

economics, economists, economic policy, financial advisers, accountants, auditors, economic problems . . .

environmentalism, environmentalists, environmental policy and regulation, environmental managers, environmental problems . . .

and so on.

This is obviously a useful, if somewhat arbitrary, way of dividing up what is a complex whole. But the categories here are not discrete, and the lines between them are something of an illusion. Our world is not actually carved up like this.

Some argue that a Venn diagram captures relationships better than a pie chart:



But all such representations have problems; this one particularly so, as it suggests that it's possible to have a society without either an economy – or an environment, which is obviously not the case. Similarly, it's not possible to have an economy without a society or an environment. But, you're no doubt thinking, it is possible to have an environment without either a society, or an economy. This was obviously the case before humans came along – and may be so again one day – soon in some people's view. This is so, but as Stephen Gough helpfully points out, it is not possible to have the environment (that is, this one – ours) without either a society or an economy.

Another way of viewing all this is through a model such as Herman Daly's ⁸ which nests human activity and what is meaningful to us within a hierarchy resting on natural capital.



Natural capital – the biosphere, the earth’s raw materials, and solar energy – is transformed through science and technology into built and human capital (tools, machines, processed materials, and human skills and know-how), and then through the political economy into consumer goods, communications, education, transport, health, wealth, and the like. Then, by means of theology and ethics, we can realise the ultimate ends of life: identity, self-realisation, community, enlightenment, fulfilment, happiness, etc. Though it has its critics, this is a powerful systems view of how the human condition depends on our sustainable exploitation of the various forms of capital available to us. It makes crucial distinctions between means and ends, and between the intermediate and the ultimate. It reminds us of how utterly dependent we are, both on natural capital (that is to say, on nature), and on our ingenuity and sense. It shows the crucial role that both science and technology, and the political sciences, have in helping us acquire the means to achieve our ultimate human goals. It also reminds us that there are ultimate human ends beyond the products of industry and our institutions. This is something we are all apt to forget – whichever end of the ideological spectrum we view such issues from. Not for the first time, I am grateful to Stephen Sterling for pointing me towards insightful literature.

Multiple perspectives; differing prognoses

Examines the way different groups view and use ideas about sustainability in order to focus on widely different learning and/or on social goals, and explores different ideas about whether social and ecological unsustainability can be cured by contemporary society, or rectified by means of appropriate learning.

I will have said enough already to suggest that multiple perspectives on sustainable development are inevitable. My research involves a study of environmental education which is a broad church whose congregation and ministers represent many facets of what we might call ‘environmental learning’. The church embraces those primarily interested in the study of the processes of nature in order to understand them, across to those who see nature as a metaphor for a preferred social order – ‘co-operative’ or ‘competitive’, according to worldview. The disposition towards sustainable development across the nine categories of environmental learning that we have identified can vary markedly. For example, many environmental educators welcome a focus on sustainable development because it provides the opportunity to raise issues of social justice, and some use it strategically to promote social change, seeing it as an opportunity to carve a new social order out of what Immanuel Kant called the “crooked timber of humanity”.

Many, however, will agree with Ingolfur Blüdhorn ⁹ when he says:

“Sustainable development has become the mantra of advanced societies which are confronted with the social and ecological side effects of their hitherto dominant mode of progress and development.”

Ingolfur notes, with some justification, that the concept has reunited previously intransigent enemies – and forged unexpected, strategic partnerships. He comments ¹⁰ :

“Sustainable development is proposed as the magic formula . . . to guide the ecological modernisation of economic and all other social processes, and to bring . . . social justice to all those who have so far remained marginalised or excluded.”

Ingolfur goes further than many, however, in arguing that our social and ecological unsustainability can’t be cured by contemporary society – or rectified by means of appropriate learning. In other words: we’ve not only got a problem, we’re also stuck with it. As Ingolfur puts it: unsustainability is here to stay. This is, of course, good news for beleaguered academics who, as the world goes to the dogs, will at least have something to study. It also occurs to me that if Ira Gershwin ¹¹ had known about all this when he was writing the 1937 Goldwyn Follies, he might have been tempted to make some minor changes to one of his songs. This is the original introduction:

*The more I read the papers, the less I comprehend
The world and all its capers and how it all will end.*

*Nothing seems to be lasting, but that isn't our affair
We've got something permanent
I mean in the way we care.*

And this is the song as Ingolfur and Ira might have written it:

*It's very clear, unsustainability is here to stay
Not for a year, but ever and a day
The radio and the telephone, and the movies that we know
May just be passing fancies and in time may go.*

*But, oh my dear, unsustainability is here to stay
Together we're . . . going a long, long way
In time, the Rockies may crumble, Gibraltar may tumble, they're only made of clay
But unsustainability is here to stay.*

This is all very well, but Ingolfur goes farther. He suggests that policy makers may actually know that unsustainability is here to stay, but are playing along, simulating action for the sake, in a sense, of public order. In other words, we've not only got a problem that we're stuck with, but we need to pretend it'll be OK – to pretend that our fate is somehow open to change. And so within a strange game of bluff and double bluff there is the intriguing possibility that we are all part of some Sustainability Truman Show as we dream our dreams, and plan our futures, quite insecure in false certainty and optimism.

Well, if this is all a simulation, who's in the know? The Department for Education and Skills, perhaps. The DfES might just have it right. Its well-known reluctance to enthuse about either environmental or sustainability issues might just be because it recognises what we might call the reality of the simulation. And because of this, it prefers to stress ICT, literacy and numeracy¹² on the grounds, perhaps, that as the good ship Humanity finally steams into the icebergs, we will at least be able to send grammatical SOS messages, read the instructions on the lifebelts, and count the survivors. Of course, if the prognoses about global warming are correct, there won't be any icebergs, and then we shall need a new set of metaphors.

The need for new metaphors

Explores the need for new metaphors about the human-nature relationship and argues that care is needed over whose 'voice' is listened to, particularly when we're urged to view the natural world as providing a coherent and liveable philosophy.

Of course, the idea that we do need new metaphors to help us think about the human-nature relationship is not new. It is something which Chet Bowers and Stephen Sterling address both with power and with considerable insight. But whose metaphors are we to choose? To whose ideas are we to listen? And whose siren voices do we need to block our ears to?

It is by no means clear that Gaia's voice is the one to listen to. Gaia is no friend of humanity – no benign force somehow interested in social welfare, cultural diversity, and environmental justice. Gaia is neutral at best, and represents the sort of even-handedness you find on the African Savannahs, as this adaptation of John Race's *Gaia Speaks*¹³ makes clear:

*I've no doctrinal preference for Green.
I don't love dolphins any more than rats,
Though I'm offended by large block of flats,
And troubled by the stink of kerosene.*

*And as to whether I should intervene . . .
I hold no brief for rare, endangered cats;
As far as I'm concerned, let horseshoe bats
Follow the creatures of the Eocene.*

*Having said that, I'm fond of modern man,
Enthusiastic agent of my plan
For him to self-destruct and leave the Earth
As harmonious, as at his birth.*

The use of words like harmonious needs particular care. Hounds and foxes, for example, would – if they could – likely have both different *and* irreconcilable perspectives on what harmonious should mean.

Of course, the modern recourse to Gaia through ideologies such as Deep Ecology is another form of the appeal to nature that we have witnessed over the centuries. The English poets have been keen on this – Wordsworth, particularly so. In 1798, stung by the poetic accusation that he was neglecting his books, and merely dreaming, he wrote at some length ¹⁴ about nature and the wisdom it brings, saying this:

*One impulse from a vernal wood will teach you more of man
Of moral evil and of good than all the sages can.*

The poem concludes:

*Enough of Science and of Art;
Close up those barren leaves;
Come forth, and bring with you a heart
That watches and receives.*

But this notion of ‘nature as teacher’ has to be resisted. Andrew Ross ¹⁵ critiques what he sees as a tendency to view the natural world as providing a coherent and liveable philosophy – a philosophy that will explain our social and ecological obligations. Ross’s point is that we should remember that what we read in the book of nature, we have socially constructed:

“Our challenge is to encourage forms of social thought and action that do not mistake wisdom about nature for the wisdom of nature.”

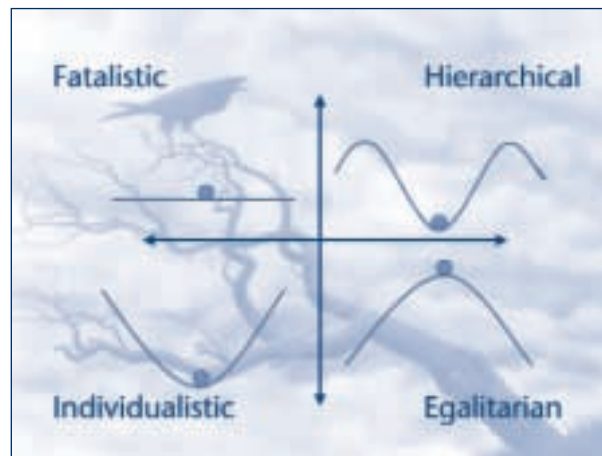
Recognising this is to call for reflexive and open-minded approaches, rather than for prescriptions of actions and ways of life.

A view from cultural theory

Argues that human knowledge of the natural environment and of our interactions with it is both imperfect and characterised by risk, and that social actors, in the face of this uncertainty, construct their environmental reality within archetypal interpretations.

Returning for a moment to Ingolfur Blüdhorn’s idea of the simulation, most of us, I imagine, will not want to believe this idea. Most of us will think that, although there is a problem, it will be possible to do something about it – even if we suspect that we might not particularly like what that turns out to be. These two issues – the extent to which there is a problem – and the degree to which we (individually or collectively) can do something about it, are linked by our perspectives on nature and by our ideological disposition towards socio-economic (and hence environmental) issues, in other words, by our social construction of reality. I find the work of Schwarz and Thompson helpful here, and I’m grateful to Steve Gough for introducing me to it. Their approach is from cultural theory and starts from the observation that human knowledge of the natural environment, and of our interactions with it, is both imperfect and characterised by risk.

Schwarz and Thompson argue that social actors, in the face of this uncertainty, construct their environmental reality within four archetypal interpretations: the fatalistic, the hierarchical, the egalitarian and the individualistic, and that each archetype is associated with a particular myth of nature, as shown here:



Hierarchists suppose nature to be tolerant within certain limits, but not if those limits are exceeded. Egalitarians view nature as ephemeral; a delicate equilibrium which may be easily and irretrievably destroyed. For the individualist, nature is benign and tolerant. Finally, for the fatalist, it is capricious and unpredictable. You might recognise something of your own perspectives here. Some, at least, of the advisers to George Bush will be Individualists; Green activists will tend to be Egalitarians, and Hierarchists will likely be those who believe the force of regulation can constrain excess and limit problems. If you are a Fatalist, however, you know that whatever you do, nature will impact on you in unpredictable ways. These archetypes are characterised by whether we see the world as individualised or collectivised, and by the view we have of our scope for influencing events.

Educational levers – social change

Explores the dangers and costs of trying to use educational interventions as levers for particular social change, and argues that normative intentions of teachers can both distort and reduce the value of the educational experience.

Which interpretation and myth of nature we are likely to favour is a result of social influences, and such interpretations may shift repeatedly both over time, and also in response to changes of both social context and role – for example between workplace, home and leisure. An important dimension to all of this is the way our political views tend to pre-dispose us to particular perspectives. Putting this simply, the more dissatisfied we are with current modes of social organisation (and the more we are attracted to alternatives) the more likely we are to seize the opportunity to use educational contexts as levers for the sort of social change we aspire to.

An example of this comes from John Smyth's story ¹⁶ of the Scottish science teacher who had few scruples in experimenting with earthworms in a good cause – in this case the cause of God-fearing temperance. The teacher takes two beakers containing garden soil, each of which contains an earthworm. Viewed by his class, to one beaker, he adds water – and to the other, the same measure of industrial strength alcohol. He leaves the beakers overnight. The next day, as he'd expected – and hoped – the worm in the soil and water was alive, but the one in the soil plus alcohol was dead. He asked the class what the experiment taught them. An instant reply came from the back row: "If you've got worms, drink whisky". So, as John notes: a successful experiment, but a badly managed learning experience, especially deficient in its understandings of the real world of the learners, as well as in its experimental ethics in relation to animal welfare. He might also have added, deficient in its understandings of how the real world pre-occupations, and normative intentions of the teacher, can distort the educational experience.

Of course, even in less extreme circumstances than this biology lesson, learners will always likely draw unexpected conclusions. We none of us quite learn what teachers teach. It is much more subtle than this. The meaning we make of experience always depends on context, and learning accrues from personally and socially constructed interpretation. In other words, what we make of it – what we learn – is down to us and our social interactions. As Andy Stables reminds us, teachers who preach gospels will, as like as not,

have them rejected. Such gospels will always be reinterpreted. Teachers cannot prescribe what the outcomes of their teaching will be; and the more we try, the more we reduce the value of the experience for the learner, and for ourselves. But in this field, such preaching is not uncommon. Pamela Courteney Hall and Larsson Rogers ¹⁷ lament a common phenomenon:

“The unfortunate positioning of students as clay to be moulded, of teachers as sculptors, and of researchers as artistic directors.”

Symptoms and prescriptions

Argues that although there is very little certainty about what sustainability will turn out to entail, there is no lack of prescription about what we should – or shouldn’t – be doing; notes that such prescriptions tend to be framed pessimistically.

Although there is very little certainty about what sustainability will turn out to entail, there is no lack of prescription about what we should – or shouldn’t – be doing; and no shortage of messages about:

living frugally	shopping locally	re-using and re-cycling
buying less	organic farming	buying fair trade
riding a bike	turning lights out	walking to work

wearing extra sweaters, and so on.

The issue here is knowing whether any such actions can necessarily be viewed as pro-sustainability. The key word here is necessarily, because nobody knows. Nobody can know what sustainability will actually entail. Because of complexities of temporal and spatial scales, any action might, at the same time, be either sustainable or non-sustainable, depending on context. Further, wherever we act, no single possible course of action is likely to be viewed as sustainable from all possible points of view because of the different value stances we take.

I’ve implied, thus far, that no consensus exists about the extent to which there is an environmental crisis. An important issue in all of this relates to how good the data and the models about the issues actually are – just how sound is the science? What is a commonplace, however, is that data and their interpretation tend to be framed pessimistically so that, no matter that improvements are made: salmon in the Thames, cleaner air, safer drinking water, shifts towards a non-carbon economy, and so on, the wider picture is presented as bad – and getting worse. Such perspectives may well be familiar. Here is an example from the website of the Qualifications and Curriculum Authority ¹⁸:

“Why should students worry about the 90 million annual increase in the world’s population . . . the 400 million unemployed in the ‘South’ . . . ozone depletion, drought, famine and poverty? Anyone . . . over the age of 50, given reasonable good luck, can expect life to go on much as it is now until we achieve our generous life expectancy Those . . . between 20 and 50 will need unusually good luck for that to happen and anyone under 20 . . . has no chance at all. Something is going to have to change.”

Such doom-saying is common. Patrick Moore, one of the co-founders of Greenpeace, is quoted in *The Observer* ¹⁹ as saying that it’s almost as though the environmental movement has to invent doom and gloom scenarios and to exaggerate problems in order to maintain public interest and raise funds. But how sensible – or ethical – is it to adopt such a stance? It is reminiscent of HL Mencken’s ²⁰ comment that:

“The whole aim of practical politics is to keep the populace alarmed – and hence clamorous to be led to safety – by menacing it with an endless series of hobgoblins, all of them imaginary.”

Skeptical environmentalists

Explores Bjørn Lomborg's The skeptical environmentalist, and the reactions to it, and argues that schools need to take care over how they present such issues as they mediate between competing claims to truth and social responsibility.

The publication of Bjørn Lomborg's *The skeptical environmentalist* ²¹ has pointed up such issues. Lomborg claims in his much contested book that the environment is not nearly in such bad a shape as some activists would have us believe, and that technology is improving lives across the planet. But these are not messages that some environmental educators wish to hear. They don't believe them for a start but some see such claims as eroding the need for alternative ways of living, and arguments for radical social change. Lomborg provides examples of how meaning is manipulated by extrapolating from short runs of data, by generalizing from small data sets, or from isolated cases, and by the use of rhetorical devices to predict problems. Environmental activists, of course, accuse Lomborg of doing much the same. However, one of Lomborg's critics, Stanford University's Stephen Schneider, was quoted in *The Economist* ²²:

"We are not just scientists, but human beings as well. And like most people we'd like to see the world a better place To do that we need to get some broad-based support, to capture the public's imagination. That, of course, entails getting loads of media coverage. So we have to offer up scary scenarios, make simplified, dramatic statements, and make little mention of any doubts we might have Each of us has to decide what the right balance is between being effective and being honest."

Whatever you think of Lomborg's analysis and his evidence of data manipulation, you'll be able to appreciate the dangers in this way of thinking, both from the possibility of frightening people into paralysis, or of diverting resources and effort away from more appropriate activity. All this raises important questions for schools as they tiptoe through this minefield between their need for integrity, and their desire to capture interest and imagination. Here is a dilemma for all teachers: where (and how) do you pitch your teaching between interest and integrity in adjudicating between competing claims to truth and social responsibility?

Curriculum and instruction

Argues that society can't use education instrumentally to bring about what it can only possibly understand through education. Argues that schools should help learners think about their lives in relation to sustainable development, and thus think about sustainable development itself in the context of everyday decision-making.

Lynn Davies ²³ writes about the contradictory functions of the school. She describes the tension between the imperative to socialise youngsters into social norms and citizen duties, on the one hand, and on the other, of the encouragement of autonomy, critical thinking and the challenge of social injustice. Such enduring tensions are not always found in relation to ideas about sustainable development where issues can be viewed somewhat instrumentally. Unesco, for example, argues that education should be seen as a primary tool in the critical endeavour of attaining a sustainable future, and in England, we currently say the following ²⁴:

"The school curriculum should pass on enduring values . . . and help (learners) to be responsible and caring citizens capable of contributing to a just society. It should develop their awareness and understanding of, and respect for, the environments in which they live, and secure learners' commitment to sustainable development at a personal, local, national and global level."

But there's a problem here, as John Foster argues. Society can't use education instrumentally to bring about what it can only possibly understand through education – that is, through learning. Foster ²⁵ says:

"Learning to understand the natural world and the human place in it, can only be an active process through which our sense of what counts as going with the grain of nature is continually constituted and recreated. This process cannot have its agenda set

to subserve sustainability criteria which it actually makes meaningful. The policy discourse, parameters and indices of operational sustainability are heuristics, and the conditions for deploying them intelligently are at one and the same time the condition for a genuinely learning, and for a deeply sustainable, society.”

In this sense curriculum can bring a critical focus to bear on what Unesco calls “The relationship between social development and economic opportunity on the one hand, and the requirements of the environment on the other.” Thus, sustainability and curriculum are necessary bedfellows – provided, as Alan Reid and I²⁶ have argued, that we mean by this that schools should encourage and enable learners to think about their lives in relation to sustainable development, and thus think about sustainable development itself, not in the abstract, but in the context of everyday decision-making.

Subjects and cross-curricular objects

Argues that there can be no single way of learning about sustainability, but that there are persuasive practical and philosophical grounds for supporting learning through subject disciplines where teachers can explore such issues with both subject coherence and professional confidence.

There can be no single way of learning about sustainability. There are different cultural and disciplinary traditions, often with no logical link between them. As Andy Stables²⁷ has noted, there are no obvious connections between learning about the production of urban photo-chemical smogs, and learning about the tendency in art and literature to ascribe human emotions and sympathies to nature (the pathetic fallacy). Each stems from distinctive perspectives, yet both are clearly relevant to understanding aspects of the human-environment relationship. This, and the difficulty of arriving at absolute understandings of how different cultures view the world, has important consequences. For example, quite different assumptions about the human–environment relationship are possible. Science will argue that its models of the workings of the natural world are getting nearer to some kinds of truth about reality, while social science will stress the relationships of social and environmental conditions, and tend to see issues in terms of equity, and in terms of social and environmental justice. Such fundamental philosophical differences shape what we experience as ‘subjects’ through the curriculum, and should not be glossed over. Such subject traditions remain paramount in schools, but can be enriched by focusing on human-environment dynamics. Yet we persist in looking for an overarching, that is to say, a cross-curricular, conceptual framework.

There is also a strong pragmatic reason to focus on within-subject approaches, which is that to do so works in tune with school life and teacher professional learning. Teachers are nurtured through disciplines at school and in higher education, and their own work is similarly structured. It is what they know, do and profess. If teacher skills and interests are to be supported, and curriculum to develop, were it not better done from *within* disciplines where an appropriate framework of ideas already exists, and where teachers can explore such issues for themselves with some professional confidence?

Such an approach has to be preferred to the imposition of extra-disciplinary frameworks – an example of which can be found through the QCA website which lists the seven key concepts of sustainable development that have been proposed by the Government Sustainable Development Education Panel:²⁸

- **interdependence**
- **citizenship and stewardship**
- **needs and rights of future generations**
- **diversity**
- **quality of life**
- **sustainable change**
- **uncertainty and precaution**

The Panel²⁹ has elaborated these concepts to create generic learning outcomes under three headings:

- **values and dispositions**
- **skills and aptitudes**
- **knowledge and understanding**

and produced sets of specific learning outcomes for learners age four to nineteen across the 5 key stages. In many ways this is a formidable piece of work, a *tour de force*, but there is an issue as to how appropriate such learning outcomes are. Specifically, does the framework they provide represent a pragmatic point of departure for work relating to sustainable development in a school system which is not only focused around subjects, but which clearly has other priorities? Inevitably, any such external framework alters the primary agenda of the discipline, as teachers are required to reinterpret their subjects using unfamiliar ideas. Only the most highly motivated will try to come to grips with such imposed, external frameworks, whereas all are capable of examining the various ways in which their subject can construe the human-environment relationship. Such an approach also avoids the trap of assuming a false conceptual consensus relating to sustainable development.

I have argued strongly here for a within-subject approach to sustainable development issues in schools. However, I do so non-prescriptively, recognising that schools must do what makes contextual sense to them. Some still argue, somewhat nostalgically perhaps, for cross-curricular themes, and still remember the heady days of the early 1990s, the National Curriculum Council, *Curriculum Guidance 7*³⁰, and all those meetings – how we were seduced by it all! So much so that, as we were all being grateful that the government had tossed us the cross-curricular bone, we failed to notice until it was too late that the lean curriculum meat was being carved and served elsewhere. This is a problem environmental (and other such ‘adjectival’) educations continue to live with today.

So, if there’s little scope for – or sense in – re-inventing cross-curricular themes, what of Citizenship?³¹ Here, sustainable development is a distinct component which might contribute three key dimensions to Citizenship:

- **international**
- **intergenerational**
- **interspecies**

The *international* reminds us not to be too parochial in our concerns. It will be taken up by those who come from an interest in development issues, and by those who champion what is known as ‘global citizenship’. The *intergenerational* reminds us that it is not just a question of how we shall live our own lives, but of how our living might affect the lives of those to come. Of course, some scope exists within geography to do this already, but this is not the case for the *interspecies* dimension. This is brought to the table uniquely through sustainable development’s interests in the relationship between humans and the rest of nature. There is a broad spectrum of issues here from animal welfare to animal rights, as we explore the extent to which humans can afford to bring ecocentric ethics to our understandably anthropocentric worldview.

It is, of course, too early to see how all this will evolve, but some scepticism is probably sensible, given the entrenched place of subject disciplines, and the demands of testing.

Why is any of this important?

Argues that educators have four responsibilities towards learners and themselves and that civil society is crucial in achieving sustainability in that individuals may need to lead the way when government and business initiatives are stymied by special interests.

By way of starting to draw this lecture to a close, let me ask what you might be thinking. Why should schools, and universities for that matter, bother? There are, after all, plenty of scientists, social leaders, other experts, and politicians around. This is so, but there’s a strong democratic argument that it matters a lot. Writing in the Worldwatch Institute’s *State of the world 2001*, Gary Gardner³² reserved a strong role in sustainable development for civil society:

“The diffuse set of actors known as civil society – individuals, civil associations and churches, among many others – has little formal power compared with government or business. But civil society is crucial in a campaign for sustainability. As consumers and

voters, citizens carry immense influence. And individuals who can flex their collective muscle may need to lead the shift to sustainability when government and business initiatives are stymied by special interests. Citizen support is usually necessary to sustain whatever initiatives are undertaken by government or business. For all these reasons, individuals and the NGOs they belong to are powerful allies in the change process.”

A related point ³³ is made by David Ehrenfeld:

“The ultimate success of all our attempts to stop ruining nature will depend on a revision of the way we use the world in our everyday living when we are not thinking about conservation. If we have to conserve the earth in spite of ourselves, we will not be able to do it.”

In similar vein, Claude Martin,³⁴ Director of the Worldwide Fund for Nature, writes:

“All the governments, scientists, experts, organizations, laws, and treaties in the world will achieve nothing unless there are free-thinking and freely-operating individuals in a position to make their own decisions about the future of their natural environment.”

This important role for ordinary people (that is, all of us), both individually and socially, is itself a powerful message to education that there is some point in education initiatives focused on environment and sustainability issues. But just how what we do affects (and helps effect) development towards sustainability remains an open question, and more research is needed to help model our understanding of how education can contribute to sustainable development – and to explore the probable and necessary limits of such contributions. There are, of course, important checks and balances built into such possibilities which any model would need to reflect. Although individuals, families, social groups and institutions will think about how they live their lives in relation to these issues, and contribute to our joint and several ways of understanding them, they won’t necessarily do what governments expect or NGOs want, or buy what sustainable business makes – unless they want to. And this is all to the good in societies which put a high premium on the responsibilities of individuals, groups and institutions to choose right actions. The power of education in a free society is that, where effective, social agency is gained by the individual and then used in utterly unpredictable ways. Any model which attempts to link educational inputs with social targets needs to acknowledge, both this democratic uncertainty, and the time lags that educational initiatives inevitably embody.

Acknowledging such limitations, what then seems sensible to do? I have recently argued ³⁵ that educators have four kinds of responsibility to learners:

- 1. To help them understand why a consideration of sustainable development is in their interests**
- 2. To use appropriate pedagogies for active engagement with issues**
- 3. To help learners gain plural perspectives**
- 4. To encourage learners to continue thinking about such issues beyond their formal education**

In the circumstances, doing less than this seems neglectful; and doing much more suggests an attempt to indoctrinate, which risks rejection and disdain. A fifth responsibility, of course, is to keep an open mind oneself as to what sustainability is. The need is to stimulate without prescribing – and to use conceptual frameworks as support for learning, rather than as restraints on imagination and creativity.

A vital aspect of curriculum

Argues that schools and teachers should be interested in sustainable development, and in sustainability, because it is in all our interests for them to do so.

In conclusion, my argument is that schools and teachers should be interested in sustainable development, and in sustainability, because it is in all our interests for them to do so. For societies and freely co-operating individuals to be free to choose right actions in relation to sustainability issues, they themselves

need to embody the frames of mind, and enjoy the conditions which foster such choice. Thus, schools and universities need to exercise their social responsibility and explore with learners what sustainable development might be – doing this in ways that make contingent and contextual sense, without prescription or proselytisation. And then, they need to share their work so that they – and we – might all learn what has been done, how effective it was, and why. That is, we might come to our own understandings of what has been achieved, and then, as Charles Lindblom³⁶ argues, we should all do what we – jointly and severally – have learned.

All this seems a challenge most worthy of the goal and I commend it to you.

Endnotes

- ¹ William Scott <w.a.h.scott@bath.ac.uk > Centre for Research in Education & the Environment, Department of Education, University of Bath, BA2 7AY <<http://www.bath.ac.uk/cree> >
- ² I am grateful to Alan Stones <<http://www.alanstones.demon.co.uk> > for permission to use his *Raven* to illustrate the lecture.
- ³ Please see <<http://trumpeter.athabascau.ca/content/v18.1/scott.html> > where many of the issues raised in this lecture are examined in greater detail.
- ⁴ Dobson A (1996) Environmental sustainabilities: an analysis and a typology. *Environmental Politics* 5(3) 401-428
- ⁵ World Commission on Environment and Development (1987) *Our common future*. Oxford: Oxford University Press
- ⁶ Hamm B and Muttagi PK (1998) *Sustainable development and the future of cities*. London: Intermediate Technology Publications (p. 2)
- ⁷ *ibid.* (p. 2)
- ⁸ See [i] Meadows D (1999) Indicators and information systems for sustainable development. In Satterthwaite D *The Earthscan reader in sustainable cities*. London: Earthscan. [ii] Clark ME (1989) *Ariadne's thread*. New York: St. Martin's Press
- ⁹ Blüdhorn I (2002) Unsustainability as a frame of mind – and how we disguise it: the silent counter-revolution and the politics of simulation. *The Trumpeter: Journal of Ecosophy* 18(1) <<http://trumpeter.athabascau.ca/content/v18.1/bludhorn.html> >
- ¹⁰ *ibid.*
- ¹¹ *Love is here to stay*. George and Ira Gershwin.
- ¹² Of course, despite all this, senior civil servants in the DfES will be perfectly well aware of the key role that literacy, numeracy and now ICT have in the process of sustainable development.
- ¹³ Effort has been made, without success, to trace the origins of this poem which I first came across some 15 years ago in environmental education curriculum materials – which themselves did not identify the source; the adaptation to the poem has been largely made in the final section.
- ¹⁴ Wordsworth W (1798/1936) The tables turned. In Hutchinson T (Ed.) *Wordsworth poetical works*. Oxford: Oxford University Press
- ¹⁵ Ross A (1994) *The Chicago gangster theory of life: nature's debt to society*. New York: Verso (pp. 1-20)
- ¹⁶ This cautionary tale may well be familiar. I have located it in Scotland to help make the point that teachers' pre-occupations and normative intentions can distort the educational experience – hence the reference to whisky, as opposed to the more usual gin.
- ¹⁷ Courtney Hall P and Rogers L (2002) Gaps in mind: problems in environmental knowledge-behaviour modelling research. *Environmental Education Research* 8(3) (In press)
- ¹⁸ Qualifications and Curriculum Authority <<http://www.nc.uk.net/esd/gq3.htm> >
- ¹⁹ *The Observer* (10 June 2001; p. 16)
- ²⁰ Mencken HL (1880 – 1956); quoted in *The Spectator* (23 February 2002; p. 10)
- ²¹ Lomborg B (2001) *The skeptical environmentalist: measuring the real state of the world*. Cambridge: Cambridge University Press. See also: <<http://www.lomborg.org> >
- ²² *The Economist* (02 February 2002; p. 16) quotes Schneider's comments in a 1989 edition of *Discover*.
- ²³ Davies L (2001) Review essay: citizenship, education and contradiction. *British Journal of Sociology of Education* 22(2) 299-308
- ²⁴ DfEE/QCA (1999) *The National Curriculum: handbook for secondary teachers in England (key stages 3 and 4)*. London: Department for Education and Employment/Qualifications and Curriculum Authority. See p. 11.
- ²⁵ Foster J (2001) Education as sustainability. *Environmental Education Research* 7(2) 153-165 (p. 154)
- ²⁶ Scott WAH and Reid AD (1998) The revisioning of environmental education: a critical analysis of recent policy shifts in England and Wales. *Educational Review* 50 213-223
- ²⁷ Stables AWG and Scott WAH (2002) The quest for holism in education for sustainable development. *Environmental Education Research* 8(1) 53-60
- ²⁸ Qualifications and Curriculum Authority, op. cit.
- ²⁹ See: <<http://www.defra.gov.uk/environment/sustainable/educpanel/1998ar/ann4.htm> >
- ³⁰ National Curriculum Council (1990) *Environmental education. Curriculum Guidance; 7*. York: National Curriculum Council
- ³¹ Crick B (1999) The presuppositions of citizenship education. *Journal of Philosophy of Education* 33(3) 337-352
- ³² Gardner G (2001) Accelerating the shift to sustainability. In Brown L et al. (Eds.) *State of the world 2001*. London: Earthscan
- ³³ Ehrenfeld D (1995) *Beginning again*. Oxford: Oxford University Press
- ³⁴ WWF International (1996) *Changing worlds: 35 years of conservation achievement*. Gland: Worldwide Fund for Nature (p. 27)
- ³⁵ Scott WAH (2002) Education and sustainable development: challenges, responsibilities and frames of mind. *The Trumpeter: Journal of Ecosophy* 18(1) <<http://trumpeter.athabascau.ca/content/v18.1/scott.html> >
- ³⁶ Lindblom CE (1992) *Inquiry and change: the troubled attempt to understand and shape society*. New Haven: Yale University Press

