

# Journal of Education for Sustainable Development

<http://jsd.sagepub.com/>

---

## Learning for a Change: Exploring the Relationship Between Education and Sustainable Development

Paul Vare and William Scott

*Journal of Education for Sustainable Development* 2007 1: 191  
DOI: 10.1177/097340820700100209

The online version of this article can be found at:  
<http://jsd.sagepub.com/content/1/2/191>

---

Published by:



<http://www.sagepublications.com>

On behalf of:

Centre For Environment Education

Additional services and information for *Journal of Education for Sustainable Development* can be found at:

**Email Alerts:** <http://jsd.sagepub.com/cgi/alerts>

**Subscriptions:** <http://jsd.sagepub.com/subscriptions>

**Reprints:** <http://www.sagepub.com/journalsReprints.nav>

**Permissions:** <http://www.sagepub.com/journalsPermissions.nav>

**Citations:** <http://jsd.sagepub.com/content/1/2/191.refs.html>

>> [Version of Record](#) - Sep 1, 2007

[What is This?](#)

# Learning for a Change: Exploring the Relationship Between Education and Sustainable Development

PAUL VARE and WILLIAM SCOTT

## Abstract

Whether we view sustainable development as our greatest challenge or a subversive litany, every phase of education is now being urged to declare its support for education for sustainable development (ESD). In this paper, we explore the ideas behind ESD and, building on work by Foster and by Scott and Gough, we argue that it is necessary now to think of two complementary approaches: ESD 1 and ESD 2. We see ESD 1 as the promotion of informed, skilled behaviours and ways of thinking, useful in the short-term where the need is clearly identified and agreed, and ESD 2 as building capacity to think critically about what experts say and to test ideas, exploring the dilemmas and contradictions inherent in sustainable living. We note the prevalence of ESD 1 approaches, especially from policy makers; this is a concern because people rarely change their behaviour in response to a rational call to do so, and more importantly, too much successful ESD 1 in isolation would *reduce* our capacity to manage change ourselves and there-

---

**Paul Vare** is an ESD consultant, and Chair and founder member of the *South West Learning for Sustainability Coalition*. Email: Learning4L@aol.com

**William Scott** is Professor of Education at the University of Bath where he directs the *Centre for Research in Education and the Environment*, and was a founding editor of *Environmental Education Research*. Email: w.a.h.scott@bath.ac.uk

fore *make us less sustainable*. We argue that ESD 2 is a necessary complement to ESD 1, making it meaningful in a learning sense. In this way we avoid an *either-or* debate in favour of a *yes-and* approach that constantly challenges us to understand *what* we are communicating, *how* we are going about it and, crucially, *why* we are doing it in the first place.

## INTRODUCTION

Whether we view sustainable development as our greatest challenge (Annan, in UNESCO 2005) or a subversive litany (Lomborg 2001), every phase of our education system is being urged to declare its support for education for sustainable development (ESD). In what follows, we explore whether we need to think about different kinds of ESD and about the relationship between educational outcomes (which we usually term learning) and social change (too simply described as behaviour change).

If there is one key idea that we wish to share in relation to education *and* sustainable development, it is that sustainable development, if it is going to happen, is going to be a learning process—it certainly won't be about 'rolling out' a set of pre-determined behaviours.

## SUSTAINABLE DEVELOPMENT, LEARNING AND CHANGE

In recent thinking about sustainable development, learning and change, Scott and Gough (2003: 113-116) identified three types of approaches:

**Type 1** approaches assume that the problems humanity faces are essentially environmental, and can be understood through science and resolved by appropriate environmental and/or social actions and technologies. It is assumed that learning leads to change once facts have been established and communicated.

**Type 2** approaches assume that our fundamental problems are social and/or political, and that these problems produce environmental *symptoms*. Such fundamental problems can be understood by means of anything from social-scientific analysis to an appeal to indigenous knowledge.

The solution in each case is to bring about social change, where *learning is a tool to facilitate choice between alternative futures which can be specified on the basis of what is known in the present*.

In both Type 1 and Type 2 approaches, learners, broadly speaking, learn to value what others tell them is important. Both these approaches have a long history and are attractive to pressure groups who advocate a shift to sustainability; they certainly helped Modbury in Devon to become 'Britain's first plastic shopping bag free town' (Guardian 2007). They are, however, not the whole story.

**Type 3** approaches assume that what is (and can be) known in the present is not adequate; desired ‘end-states’ cannot be specified. This means that any learning must be open-ended. Type 3 approaches are essential if the uncertainties and complexities inherent in how we live now are to lead to reflective social learning about how we might live in the future.

## TWO SIDES OF ESD

In relation to ESD, we argue that it is helpful to think of two interrelated and complementary approaches which we term ESD 1 and ESD 2.

<b>ESD 1</b>	● Promoting/facilitating changes in what we do
	● Promoting (informed, skilled) behaviours and ways of thinking, where the need for this is clearly identified and agreed
	● Learning <b>for</b> sustainable development

ESD 1 maps onto Types 1 and 2 approaches mentioned earlier. Some will see it as a case of single-loop learning (Argyris & Schön 1978, 1996), where we learn to do things differently and more efficiently. It involves raising awareness of the necessity for change and ‘signposting’ goods and services that will reduce the ecological footprint of our activities. Where appropriate, we can guide positive actions through a combination of incentives and penalties—it’s a basic form of learning but it’s still learning. Its effects (e.g., reducing waste, saving energy) can be measured through reduced environmental impact—as the UK’s National Framework for Sustainable Schools (Teachernet 2007) makes clear.

ESD 1 fits with the received view of sustainable development as being expert-knowledge-driven where the role of the nonexpert is to do as guided with as much grace as can be mustered. Some see this as UNESCO’s view, and what—by and large—is driving the UN Decade of ESD, pointing, for example, to the section of the UN Decade’s implementation plan (UNESCO 2005) which says: ‘The DESD promotes a set of underlying values, relational processes and behavioural outcomes, which should characterize learning in all circumstances.’

In broad terms, it is how many government departments and NGOs seem to think. ESD 1 is important, however, for two main reasons:

1. There are clear benefits to organisations, families and individuals to be had in the short term, as well as wider environmental and social benefits.
2. We just have to do the obvious things—for example, there are few good arguments against insulating loft spaces.

However, not everything is as simple as loft insulation, which takes us to ESD 2 which can be characterised like this:

<b>ESD 2</b>	● Building capacity to think critically about [and beyond] what experts say and to test sustainable development ideas
	● Exploring the contradictions inherent in sustainable living
	● Learning <b>as</b> sustainable development

Some will see this as a case of double-loop learning, where we learn to do different things to be more effective. Examples include thinking about what ‘being more sustainable’ means. It is inherently educative, maps onto Scott and Gough’s Type 3 approaches to learning and embodies a different view of what sustainable development *is*. From this perspective, sustainable development doesn’t just depend on learning; it is inherently a learning process. This leads to radically different definitions, as John Foster (2002) has argued:

Sustainable development is:

- a process of making the emergent future ecologically sound and humanly habitable as it emerges, through the continuous responsive learning which is the human species’ most characteristic endowment
- a social learning process of improving the human condition
- a process which can be continued indefinitely without undermining itself.

This way of thinking about sustainable development encapsulates the core role for learning as a collaborative and reflective process and captures the intergenerational dimension and the idea of environmental limits.

In ESD 2, we can’t measure success in terms of environmental impacts because this is an open-ended process; outcomes will depend on people’s unforeseen decisions in future, unforeseeable circumstances. But we can research the extent to which people have been informed and motivated, and been enabled to think critically and feel empowered to take responsibility.

ESD 2 not only complements ESD 1, it makes it meaningful, because our long-term future will depend less on our compliance in being trained to do the ‘right’ thing now, and more on our capability to analyse, to question alternatives and negotiate our decisions. ESD 2 involves the development of learners’ abilities to make sound choices in the face of the inherent complexity and uncertainty of the future. As Scott and Gough (2003: 147) note:

By learning throughout our lives we equip ourselves to choose most advantageously as the future unfolds. This would not bring about sustainable development. Rather, it would be evidence that sustainable development was happening.

Authorities who promote sustainable development often see formal education in terms of ESD 1. This is worrying for two reasons:

1. People rarely change their behaviour in response to a rational call to do so, and perhaps more importantly
2. Too much successful ESD 1 in isolation would *reduce* our capacity to manage change ourselves and therefore *make us less sustainable*.

This is a classic double bind: the more we focus on delivering ESD 1, the less likely it is that we will be asking people to think for themselves through essential ESD 2.

In ESD 1- dominated programmes, sustainability values and principles are explicit while the values of learning for learning's sake may be implicit if stated at all. With ESD 2, the values of learning are explicit whereas sustainability values may be implicit. If both forms of ESD are held in tension, then all is well. If this paper appears to favour ESD 2, that is because:

1. we view ESD from the perspective of educationalists with a concern for sustainable development (rather than say, environmentalists pressing education into our service), and
2. we have noted a deep-rooted preference for ESD 1 both in policy prescription and the work of nongovernmental organisations, we are thus seeking to redress the balance.

Despite our emphasis on complementarity, it might be thought from these arguments that ESD 1 should in some sense normally come *before* ESD 2, for example, in preparing the ground (establishing basic facts, perhaps) for more contentious and challenging aspects, or because it will be somehow easier for less mature learners. While we can accept that it may take time to acquire the skills to apply both approaches in a successful pedagogic strategy, we see no reason why ESD 2 should not be practised and understood by novice educators in different contexts before they gain specific technical knowledge and/or instructional techniques required for ESD 1 on specific topics. Social marketing (an ESD 1 approach), for example, can require a high level of skill and knowledge in order to tackle more complex issues (such as those surrounding the relative impact of different waste reduction strategies), whereas many newly-qualified teachers are able to facilitate philosophical enquiries (an ESD 2 approach) after a few hours of training in conducting open-ended discussions.

## THE YIN-YANG OF ESD

Thus, rather than view ESD 1 and ESD 2 as sequential, as absolute opposites held apart along a continuum, or as competing sets of skills, we would argue that the ancient Chinese concept of Yin and Yang (Figure 1) provides a more appropriate heuristic.

In a brief summary of Yin and Yang, Hooker (2007) identifies a number of underpinning principles that



**Figure 1** The Yin–Yang Symbol

describe their interdependent nature; these can usefully be applied to ESD 1 and ESD 2 as a test of their complementarity:

**All phenomena have within them the seeds of their opposite state** No phenomenon is completely devoid of its opposite, hence they are not complete opposites; this is represented by the dots within the Yin – Yang symbol.

The ESD 2 approach is often presented as a case for more liberal education (which it may well be) in opposition to ESD 1, which reflects a more limiting ‘instrumental’ view of education. Viewed from the Yin–Yang perspective, ESD 1 and 2 are complementary because people need to hear what the sustainability lobby and governments are telling us to do (through ESD 1) in order to have relevant subject matter to debate and test in our own contexts. ESD 2, although open-ended, cannot exist in a vacuum devoid of content.

**All phenomena change into their opposites in an eternal cycle of reversal** An extreme version of ESD 1 could quickly transform into ESD 2 and vice versa:

In 2006, a school endorsing a high profile (ESD 1) campaign for nutritious school meals discovered parents feeding chips (french fries) and hamburgers to their children through the school fence. Rather than adopt the desired behaviour, these parents were exercising their critical faculties; as a result they may be better prepared to critique other campaigns in future. Thus promoting a particular behaviour gave rise, unwittingly, to involvement and more independent thinking.

On the other hand, a dogmatic insistence on ESD 2 could give rise to a prescriptive form of ESD 1. For example, Earth Education, an ostensibly exploratory, learner-centred approach to environmental education (van Matre 1979) was frequently promoted through workshops that put pressure on participants not to deviate from the programme.

**No one principle dominates eternally** The introduction of the English National Curriculum, and its increasingly prescriptive nature, through the early 1990s, could be seen as an inevitable reaction to the liberal education of the 1960s and 1970s. During this period of change, environmental education, which had placed great emphasis on direct experience of nature, began to be justified in terms of tangible curriculum-based learning outcomes.

More recently the National Curriculum has become less prescriptive while decision-making is being devolved to school and classroom level. As for outdoor education, broader developmental arguments have been marshalled in its favour (DfES 2006). The Yin–Yang symbol turns inexorably.

**‘Opposing’ principles consume and support each other** If ESD 1 can be characterised as learning from an external source, then ESD 2 arises when we make up our own minds and *internalise* our learning. In a review of behaviour change theories, Andrew Darnton (2006) shows how both processes can take

place simultaneously or one give rise to the other. Darnton cites Festinger's (1957) *Theory of Cognitive Dissonance* that describes how we seek information that supports our behaviour, a process that may apply even when new behaviours have been forced upon us. As an example, Darnton cites London's congestion charge that had little support before it was introduced but was favoured by the majority of Londoners after one year of operation. Festinger's theory suggests that people assimilated evidence that supported the congestion charge and so their attitudes shifted to match their behaviour which helped to counteract confusing feelings of 'dissonance'. In this way, an extreme form of ESD 1 (a change in the law) has supported a process where, over time, people decided for themselves (ESD 2) that they favour a prosustainability policy.

Another perspective on ESD's two-sided existence is provided by Giddens' concept of structuration (Cassell 1993). This describes how patterns of social practice are 'structured' by rules, resources and power. But this structure is not an externally imposed one; by our observation of the rules, we bring the structure into being, and this produces 'agency' or the possibility of our then changing the structure. For example, by speaking English, we observe the language rules, but we also change the way the language is spoken even as we use it. This structure is both *the medium*, or way of doing things (e.g., being told what to do through ESD 1), and *the unintended outcome of our social practices*, in other words, it constitutes an emergent future that we are simultaneously developing the capacity to embrace, which is typical of nondirective ESD 2.

This is 'learning as participation' (Vare 2007) where the very act of engagement in a process causes us to gain a deeper understanding of it to the extent that we may feel we can influence it. However, we cannot (and *should not*) expect to control where this engagement will lead. Studies of 'situated learning' (Lave and Wenger 1991) demonstrate that learning is context specific and that reflexive learners, while gaining mastery of new skills or disciplines, will begin to modify that which they so recently acquired, even in the face of resistance from past masters. We hold it as self-evident that transformation in any sphere of human endeavour is more likely to be achieved in this way rather than by people being told what to think.

## CONCLUSION

The complementarity of ESD 1 and 2 has significant implications for educators, and we would suggest these include the need to have:

- strategies that clearly promote learning as an *outcome*, as well as the means to an end (however laudable that end may seem)
- a clear rationale for the use of different teaching / learning strategies, i.e., employing information and communication (where there is near-universal agreement about detailed scientific facts and values), balanced with the



facilitation of learning through mediation (where significant parameters such as facts and values are disputed)

- an openness to the unplanned directions that learners will take as a result of this engagement
- evaluations that go beyond the 'has it been learned?' questions to capture unforeseen 'what has been learned?' outcomes, and 'how do we know?' enquiries as further sources of learning.

In this brief paper we have sought to avoid the *either/or...* debate that tends to dominate ESD discourse in favour of a *yes/and...* approach that constantly challenges us to understand *what* we are communicating, *how* we are going about it, and, crucially, *why* we are doing it in the first place.

## References

- Argyris, C. and D. Schön. 1978. *Organisational Learning in Action: A theory in action perspective*. Boston, MA: Addison-Wesley.
- . 1996. *Organisational Learning II: Theory, method and practice*. Reading, MA: Addison Wesley.
- Cassell, P. (ed.) 1993. *The Giddens Reader*. Basingstoke: Macmillan.
- DfES. 2006. *Learning Outside the Classroom Manifesto*. Nottingham: HMSO/DfES.
- Darnton, A. 2006. *Promoting Pro-Environmental Behaviour: Existing evidence to inform better policy-making*. London: Defra.
- Festinger, L. 1957. *A Theory of Cognitive Dissonance*. Stanford, CA: Stanford University Press.
- Foster, J. 2002. 'Sustainability, Higher Education and the Learning Society', *Environmental Education Research*, 8 (1): 35–41.
- Guardian. 2007. 'Carrying Conviction', *The Guardian*, 16.05.2007.
- Hooker, R. 2007. 'Chinese Philosophy: Yin and Yang'. <http://www.wsu.edu/~dee/CHPHIL/YINYANG.HTM> (accessed 30 June 2007).
- Lave, J. and E. Wenger. 1991. *Situated Learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.
- Lomborg, B. 2001. *The Skeptical Environmentalist*. Cambridge: Cambridge University Press.
- Scott, W.A.H. and S.R. Gough. 2003. *Sustainable Development and Learning: Framing the issues*. London: RoutledgeFalmer.
- Teachernet. [http://www.teachernet.gov.uk/sustainable-schools/framework/framework\\_detail.cfm](http://www.teachernet.gov.uk/sustainable-schools/framework/framework_detail.cfm) (accessed 30 June 2007).
- van Matre, S. 1979. *Sunship Earth: An Earth Education Program for Getting to Know Your Place in Space*. Martinsville, IN: The American Camping Association.
- Vare, P. 2007. 'From Practice to Theory: Participation as learning in the context of sustainable development projects'. In A.D. Reid, B.B. Jensen, J. Nikel and V. Simovska (eds), *Participation and Learning: Perspectives on education and the environment, health and sustainability*. Dordrecht: Springer Press.
- UNESCO. 2005. *UN Decade of Education for Sustainable Development 2005 - 2014: The DESD at a glance*. Paris: UNESCO.