Chapter 4
Education for Sustainable Development (ESD): A Critical Review of Concept, Potential and Risk

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4.1 In the Beginning ... Sustainable Development

The last 50 years have shown how human socio-economic development continues to compromise the biosphere's ability to support life on Earth through phenomena such as climate change, widespread chemical pollution, ocean acidification, stratospheric ozone depletion, habitat destruction, biodiversity and species loss, freshwater depletion, disruption of material cycles, desertification, and the like (Ehrlich and Ehrlich 2013; Worldwatch 2013; WWF 2012). At the same time, there has been increased understanding that the continuing scourges of poverty, malnutrition, disease, illiteracy, discrimination, misogyny, racism, and so forth, comprise "growing inequalities between people across the world in terms of access to resources and achieving well-being" that are, as Vare and Scott (in press) put it, "both an affront to human dignity and a source of international and intercultural instability".

In response, United Nations' commissions, conferences, and Earth summits have resulted in ideas around sustainable development (SD), and much international activity on global socio-economic and environmental goals—most recently the UN's millennium development goals, agreed in 2000 covering issues such as poverty, child mortality, gender inequality and environmental degradation (UN no date).

This idea of sustainable development embodies the conjoined objectives of human well-being and a well-functioning biosphere in order to make widespread and enduring human fulfillment a possibility. It gained prominence through the *World Conservation Strategy* and the Brundtland Report (*Our Common Future*), which saw sustainable development as a socio-economic process in which

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the exploitation of resources, the direction of investments, the orientation of technological development and institutional change, are made consistent with future as well as present needs. (World Commission on Environment and Development (WCED) 1987: 17)

Our Common Future describes sustainable development in this way:

(...) development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:

- the concept of "needs", in particular the essential needs of the world's poor, to which overriding priority should be given; and
- the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs (WCED 1987: 41).

In this sense, a different way of socio-economic development is being sought to enable everyone to live well, and within the Earth's ability to support us—now and in the future—where the idea of sustainable development embodies an ethical commitment to the well-being of all humanity and the biosphere. Hamm and Muttagi clarify a crucial point:

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. (1998: 2)

However, as these views aim to reconcile environmental protection with economic growth, Bonnet wrote for the many who saw this as trying to square the circle, when he viewed sustainable development with suspicion because of its "(...) highly anthropocentric and economic motives that lead to nature being seen essentially as a resource." (2007: 170).

Oxfam has recently captured the substance of these goals in a striking fashion with a model of sustainable development that combines the concepts of *planetary* and *social boundaries*:

Achieving sustainable development means ensuring that all people have the resources needed—such as food, water, health care, and energy—to fulfil their human rights. And it means ensuring that humanity's use of natural resources does not stress critical Earth-system processes (...). (Oxfam 2012: 4)

These goals are set in a bounded framework (see Fig. 4.1 below) where:

The social foundation forms an inner boundary, below which are many dimensions of human deprivation. The environmental ceiling forms an outer boundary, beyond which are many dimensions of environmental degradation. Between the two boundaries lies an area—shaped like a doughnut—which represents an environmentally safe and socially just space for humanity to thrive in. It is also the space in which inclusive and sustainable economic development takes place. (ibid.: 4)

This is a compelling image where

the 11 dimensions of the social foundation are illustrative and are based on governments' priorities for Rio+20. The nine dimensions of the environmental ceiling are based on the planetary boundaries set out by Rockström et al. (2009b). (ibid.: 4)
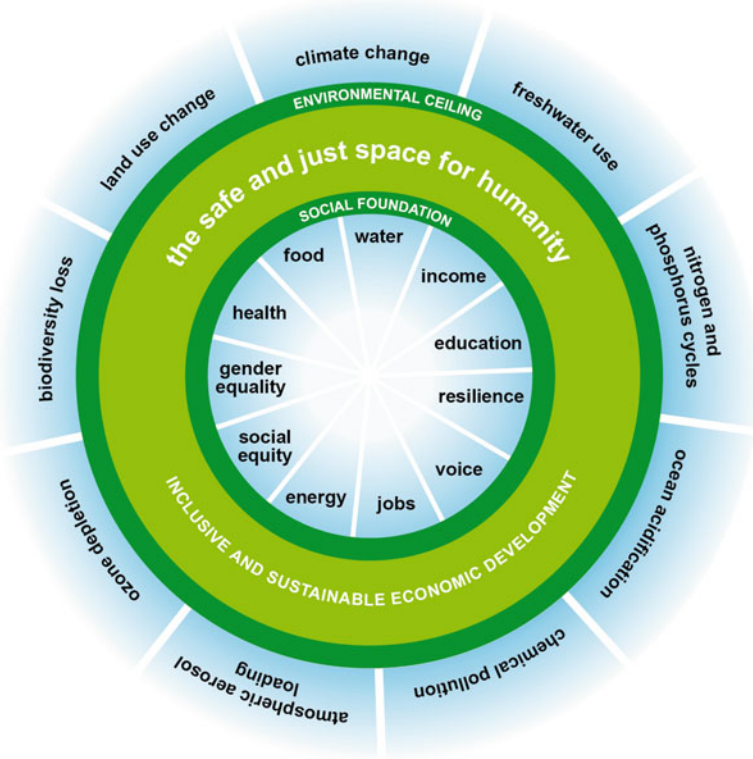
Fig. 4.1 A safe and just space for humanity to thrive in: a first illustration (From Oxfam 2012, reproduced with the permission of Oxfam GB, Oxfam House, John Smith Drive, Cowley, Oxford OX4 2JY, UK www.oxfam.org.uk. Oxfam GB does not necessarily endorse any text or activities that accompany the materials)

There are, however, problems with this analysis that illustrate some of the difficulties of thinking about, and operationalising, sustainable development. Most fundamentally these are about the way that Oxfam uses the idea of *boundaries*. It does this in two ways: first as socially-constructed desired minimum floors, and secondly as upper thresholds beyond which very significant environmental consequences are likely. But these social and environmental dimensions are not equivalent. It is uncomfortable, too much so for Oxfam perhaps, but one (the environmental) is likely to be more absolute than relative, and not amenable to social construction in the same way that the social one clearly is. For example, were income poverty (currently defined as <$1.25/day) ever to be eradicated, it would immediately be redefined as, say, <$2/day. Indeed, this would happen long before the $1.25 level was exceeded. In this sense, poverty levels will be re-defined such that poverty, relatively at least, endures.

Conversely, we cannot define for ourselves what the critical natural thresholds are for ocean pH, atmospheric carbon, etc., though we may come to learn what these

are in time, if we are unfortunate. These are not socially constructed, except in the narrow sense that we create limits for ourselves in the policy process in order to increase our chances of staying within those limits—whatever they turn out to be. Think of blowing up a balloon. We may caution not to go beyond a 30 cm diameter, but there will be a limit set by the material-air system (not our values, wishes or thinking) at which the material will fail and the balloon will burst. This 30 cm diameter, just like a 350 ppm limit for atmospheric CO_2 (Hansen et al. 2008), is just our best guesstimate at staying well below the critical failure limit.

These two boundaries are obviously both important, but one *is* much more fundamental than the other, and we do ourselves no favours by asserting otherwise. Oxfam may well have felt it had little choice but to do this, given the political pressure it obviously feels from supporters and funders to ensure that enhancing social justice, viewed broadly, is at the forefront of its thinking and actions. Similar pressures are felt, as I shall explore in what follows, by many of those who espouse educational interventions around sustainability, especially if they come to this from development education backgrounds where people's interests are always placed first. Such pressures also suffuse the UN's post-Rio processes around moving from *millennium* to *sustainable development* goals (UN 2013a).

All that said, the approach by Oxfam is to be welcomed as a contribution to a setting out of the issues. Agreeing on meaning remains difficult, however, and relativism only gets you so far. In research carried out for the Higher Education Funding Council for England (Hefce 2008) it was clear that there was no one view of sustainable development that could command consensus across the sector. Although the researchers began by defining teaching and research activity relating to sustainable development as that containing …

> a significant element related to either or both of the natural environment and natural resources, PLUS a significant element related to either or both of economic or social issues

… it was impossible to maintain the conceptual tightness of this framing whilst collecting the data that academics in the institutions wanted the researchers to collect. This contrasted sharply with similar data collection in Wales through the STAUNCH initiative (Lozano 2010) where a much looser framing was allowed which did not specify or attempt to demand the significance of the natural environment, and so was more permissive. This clearly led to an over-counting of incidences of sustainable development as a focus of academic activity. Whilst sustainable development may be a socially constructed idea, this does not mean you can construct it any way you like.

All this matters because your conceptual framing of sustainable development influences how (and if) you think about ESD, and will be a key factor in determining your framing of ESD. This may go some way to explaining why there are such diverse, and often polarized, views on how to think about ESD—or whether it is worth thinking about at all; most teachers and academics, despite the Decade, do not think about ESD at all.

4.2   Sustainable Development, Learning, and ESD

If sustainable development is concerned with building our capacity to live well within the Earth's ability to support us, this will inevitably involve *learning* to do this, given where we are starting from. A popular view of this is as a process through which we shall need to learn to live in tune (or in harmony) with the environment.

So, what is this learning? Is it just the usual sort of thing? Can we view it just as the outcomes of what teachers, trainers, and work-based professional developers get up to in educational settings? If so, then it will be about re-visioning goals, curriculum re-design, new and pre-specified learning outcomes, re-oriented approaches to professional accreditation and training, and changes to examination and quality assurance systems. In other words, it will be about changes to what is learned and to how this is done, and why. If you are thinking about these issues from within formal education, or thinking about schools (and colleges/universities) as institutions, then it might seem obvious that this must be the case, to some degree at least. But if you are outside such systems, you might see all this as necessary, but far from sufficient, particularly if you see sustainable development itself a social learning process that will not be taking place at all if learning is not happening.

John Foster ([2008](#)) argues that sustainable development makes no sense other than as a social learning process of improving the human condition that can be continued indefinitely without undermining itself. He argues that sustainable development does not depend on learning; rather, it is inherently a learning process of making the emergent future ecologically sound and humanly habitable, *as* it emerges through the continuous responsive learning which, Foster says, is the human species' most characteristic endowment. Foster neatly captures the idea of learning as a collaborative and reflective process, the extension of this into an inter-generational dimension, and the idea of environmental limits. In this view, the learning that takes place in schools, colleges and universities is a small part of what we shall need to do. The UN's focus on public awareness is an acknowledgement of this breadth, and community-based NGOs understand this, though not always to the extent that they understand that learning needs to be systemic.

Over the same 50 year timescale that we saw earlier, education has come to be seen by some as a crucial social strategy if new ways of socio-economic development are to emerge that will enable everyone to live well, and keep within the Earth's ability to support life. This has resulted in the idea of education for sustainable development (ESD), and a UN Decade (DESD: 2005–2014) of global activity focused on this, which is now drawing to a close.

ESD can be thought of as the bringing together of a wide variety of educational strategies aimed at addressing the existential problems of human socio-economic development. But, as we near the end of the Decade, what can we say about how ESD is conceptualised and interpreted; about its coherence and usefulness as an idea; about how well it fits within education systems and schools; about its potential as a strategy to change educational experiences across the globe; and about the

uncertainties and ambiguities at its heart? This idea of ESD is not novel. Its origins lie within environmental education (EE) whose own genesis was in nature study, outdoor education and conservation education (Disinger 1983/1997 18; Roth 1978). Environmental education emerged in the 1960s as a result of the growing awareness of the environmental and social challenges humanity faced, and was first formalised by the World Conservation Union (IUCN) in 1970 as

> a process of recognising values and classifying concepts in order to develop skills and attitudes necessary to understand and appreciate the inter-relatedness among man, his culture and his biophysical surroundings. Environmental Education also entails practice in decision-making and self-formulating of a code of behaviour about issues concerning environmental quality. (1970)

These intertwined social and environmental goals were further developed through the seminal UN conferences of the 1970s, culminating in the *Tbilisi Declaration* (UNESCO-UNEP 1978), and were well summed up by Stapp et al. echoing the work of Harvey (1977):

> (...) the evolving goal of EE is to foster an environmentally literate global citizenry that will work together in building an acceptable quality of life for all people. (1979: 92)

During the 1980s, environmental education was promoted most vigorously by non-governmental organisations (NGOs), particularly, though not exclusively, in economically developed societies, as the global reach of, say, WWF, illustrates. In broad terms, NGOs' policy proposals and educational resources attempted to shift mainstream education practice towards the Tbilisi goals. Whilst there was some modest influence on curriculum and teacher professional development, this was not ultimately significant and made little lasting impact on national education systems. Smyth (1995) suggested that the adjective *environmental* had been a significant barrier as it signalled that environmental education was something separate from established disciplines, thereby outside mainstream educational debates and practice. Much the same can be said today of ESD.

The idea of ESD evolved in the 1990s stimulated through *Caring for the Earth*: *a strategy for sustainable living* (IUCN, UNEP & WWF 1991), the 1992 Rio *Earth Summit*, and *Agenda 21* which set out to be a comprehensive plan of action by governments, NGOs, and networks (globally, nationally and locally) to reduce human impact on the environment. Agenda 21 gave rise to much activity, but though there was a chapter (36) on education, training and public awareness, there was no mention of ESD other than, obliquely in a different chapter: "Demographic and sustainable development education should be coordinated and integrated in both the formal and non-formal education sectors." (Agenda 21 1992: 27).

There are, however, numerous references to both environmental education and development education in Agenda 21, especially in Chapter 36. Drawing on Agenda 21, the UN identified four overarching goals for "all Decade stakeholders":

- *Promote and improve the quality of education*:
    The aim is to refocus lifelong education on the acquisition of knowledge, skills and values needed by citizens to improve their quality of life;

- *Reorient the curricula*:

    From pre-school to university, education must be rethought and reformed to be a vehicle of knowledge, thought patterns and values needed to build a sustainable world;
- *Raise public awareness and understanding of the concept of SD*:

    This will make it possible to develop enlightened, active and responsible citizenship locally, nationally and internationally;
- *Train the workforce*:

    Continuing technical and vocational education of directors and workers, particularly those in trade and industry, will be enriched to enable them to adopt sustainable modes of production and consumption. (UNESCO 2005a: 5)

It is clear that this is a reference, not just to all provision of education, training and professional development, but also to the everyday business of living together in society. In this, it looks back to the 1977 Tbilisi Conference for its fundamental principles. There is no sense here of creating something separate from the education that already exists; rather, the idea was to improve, and sharpen the focus of, that education.

> Education, including formal education, public awareness and training, (. . .) is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues. While basic education provides the underpinning for any environmental and development education, the latter needs to be incorporated as an essential part of learning. Both formal and non-formal education are indispensable to changing people's attitudes so that they have the capacity to assess and address their sustainable development concerns. It is also critical for achieving environmental and ethical awareness, values and attitudes, skills and behaviour consistent with sustainable development and for effective public participation in decision-making. To be effective, environment and development education should deal with the dynamics of both the physical/ biological and socio-economic environment and human (which may include spiritual) development, should be integrated in all disciplines, and should employ formal and non-formal methods and effective means of communication. (Agenda 21 1992: #36.3: 320)

Following the Johannesburg *World Summit for Sustainable Development* in 2002, the UN General Assembly adopted resolution 57/254 to launch the UN Decade (2005–2014) (UN 2002). This invited Governments to consider the inclusion of measures to implement the Decade in their respective educational strategies and action plans by 2005, taking into account the international implementation scheme to be prepared by UNESCO (UN 2004). Later, Resolution 59/237 (2004) invited governments to promote public awareness of, and wider participation in, the Decade through cooperation with and initiatives engaging civil society and other relevant stakeholders. Looking back 10 years, this understandable strong focus on governments (it was the UN after all) looks odd, given just how much the Decade (and ESD) has proved so very non-governmental in its organisation.

UNESCO says that ESD:

- allows every human being to acquire the knowledge, skills, attitudes and values necessary to shape a sustainable future; and (. . .)
- touches every aspect of education including planning, policy development, programme implementation, finance, curricula, teaching, learning, assessment, administration, etc. (2013)

The difficulty of this sort of phrasing is that it positions ESD as having a separate existence, with this reification placing it outside the mainstream, with all the problems that Smyth noted. As UNESCO's report on the Decade puts it: "ESD [has] gained recognition internationally as an education relevant to addressing today's SD challenges" (2012: 6). What this loose phrasing actually means is that *education* is recognised as relevant to addressing sustainable development challenges. "*Recognised*" by whom, however, is never made clear, but the suspicion must be that this is only by a narrow insider grouping of committed activists and professionals. There is little evidence in the report of whole education systems being re-oriented, although it does say that "the need for ESD was well established in national policy frameworks" (2012: 5). Even this seems a generalisation too far. This reification, essentially seeing ESD as equivalent to a subject or discipline, inevitably leads to conclusions such as: "ESD is difficult to teach in traditional school settings where studies are divided and taught in a disciplinary framework." (McKeown 2002: 32), and to the compilation of examples "of ESD teaching" (Environmental Association of Universities and Colleges (EAUC) 2013).

4.3   Change, Continuity and Critique

For the UN (2004), the overall goal of the DESD was to integrate the values inherent in sustainable development into all aspects of learning to encourage changes in behaviour that would create a more sustainable future in terms of environmental integrity, economic viability, and a just society for present and future generations.

This emphasis on human behaviour change fits uneasily with the 1970s focus on values, cognition, skills and attitudes, but behaviour change as an educational goal was firmly established within environmental education. As Hungerford and Volk confidently asserted: "The ultimate aim of education is shaping human behaviour" (1990: 302) where

> responsible citizenship behaviour can be developed through environmental education. The strategies are known. The tools are available. The challenge lies in a willingness to do things differently than we have in the past. (Hungerford and Volk 1990: 317)

Put simply, this approach says that:

- if we can create a curriculum that takes sustainability issues seriously
- provide enough information about ecological concepts and environmental inter-relationships,
- provide carefully-designed opportunities for learners to acquire environmental sensitivity and a sense of empowerment,
- enable learners to acquire analytical and investigative skills, and citizenship action skills.

. . . then they will acquire understanding and both cognitive and social skills, their attitudes will shift, and then their behaviour will change in pro-sustainability ways.

This very influential model is rooted in a scientific-realist view of the world and draws on the notion of responsible environmental behaviours arising out of Ajzen and Fishbein's (1980) theory of planned behaviour. It sees behaviours as the interaction of the "desire to act" with "situational factors" and brings together issues associated with an understanding of scientific and ecological concepts and how these relate to our everyday lives, and the psychological influences *on* those lives. Hungerford and Volk elaborated two curricular strategies concerned with issue identification and action taking which found a reflection in work on action competence (Jensen and Schnack 1997; 2006) in Denmark, although the Danes did not make the mistake of thinking, as Hungerford and Volk (1990: 303) did, that the "major methods of citizenship action" could be divorced from the "investigation of issues". Nor did Jensen and Schnack ever think that education should set about developing citizens who will behave in desirable ways.

This continued emphasis on individual behaviour change pervades current thinking about the outcomes of ESD programmes. See, for example, Vare and Scott (2008) for a comment on the tendency within global learning and development education programmes in schools to promote (as opposed to critically appraise) fair trade schemes.

A serious problem with the Hungerford and Volk model lies in its separation of the desire to act from 'situational factors'; that is, from the social and economic context within which those acts will take place. This is a naïve notion of citizenship that assumes that the desire to act is volitional as opposed to existential, and it looks as if all non-psychological and rather awkward socio-economic issues were dumped into a box labelled 'situational factors'. A distinct benefit of using a sustainability discourse (as opposed to just an *environmental* one) is that such conveniences are ruled out on conceptual grounds. Sustainability's framing embraces economic and social issues together with environmental ones, the first two cannot just be wished away by focusing only on pro-*environment* behaviours, to the exclusion of social justice, the elimination of poverty, and the like. Our experience of living and working requires us all to navigate our way through these incommensurate ideals both at global, national, community and family levels.

It is understandable why all this invited the sort of criticism which soon came from critical realists (Robottom and Hart 1995) within environmental education in opposition to what they saw as a *behaviourist* emphasis and a complete failure to critique socio-political circumstances within which all such behaviours were to be embedded. Their purposes, rooted in emancipatory action research (Fien 1993), were to help teachers and students work towards social transformation. Theirs was an alternative model which was grounded in a desire to bolster social and ecological justice and through this reduce socio-economic disparities. It came to be associated with development education, and an opposition to neo-liberal approaches of all kinds. This model sets out to effect social rather than behaviour change and has cognitive and affective elements. Its use has largely been with teachers and teacher trainers (see Huckle 2006), and is associated with socially-critical theory and its focus on the economic forces that direct and buffet our lives. The purposes of this perspective on ESD is to show teachers and students how to analyse the values

behind their socially-learned behaviour patterns and how to resist such forces and work towards social transformation. A key focus was helping students and teachers to ask appropriate socially-critical questions, typically of the *cui bono?* form.

This model, put simply, says:

- if we can influence opinion-formers (e.g. teachers), and through them, influence learners,
- raising their awareness and consciousness (and countering false-consciousness) of the issues that prevent a sustainable society,
- then their under-pinning values will be changed,

. . . and they will argue, work, vote and agitate for (pro-sustainability) social change.

This perspective also opposed what it saw as liberal education's tendency not to ask critical questions of society because of its focus on the individual as a learner where an education was, to a significant degree, seen as *for* itself—i.e., the outcome was an educated individual whose knowledge, understanding, skills and other attributes were well grounded within the prevailing culture, and whose literacy had critical dimensions as well as functional and cultural (Stables 2010). A critique of this liberal tradition would be that there is too *little* emphasis on behaviour modification and insufficient focus on social inequities and the need for change. The liberal educators' response to this is that encouraging critical questions of society, and looking for the need for change, is at its heart, it is just that the answers are never pre-specified as they tend to be in socially-critical or behavioural approaches. And it is, they argue, no business of educators to persuade learners to change behaviours or society in pre-specified ways. Rather, this is the business of politicians and socio-political activists, social marketers and the advertising industry, but not of educators. Of course, a pertinent response to this might be that it illustrates a liberal education blind spot, as its own preferred approach to education contributes towards the perpetuation of particular social models. See Huckle (2013) for an up-to-date consideration of these approaches in the context of ESD and the Eco-Schools movement.

What seems common ground is that ESD can helpfully be seen as an education in citizenship: a responsive social learning process which is a preparation for informed, open-minded, social engagement with the main existential issues of the day that occur in the family, the community and workplace—in all aspects of a lifelong learning. Clearly, being socially critical, and actively considering changes in entrenched behaviours, are each citizenly qualities that are necessary if societies are to actively re-create themselves, and a way has to be found to bring these together in schools and other institutions if building an acceptable quality of life for all people is to be possible. Schools, colleges and universities, as institutions, are an acknowledged, integral part *of* any learning society, with the key role of supporting young people in the *early* stages of their acquiring the wide-ranging understandings, skills and capabilities that they will need to continue to develop for successful and fulfilling engagement with, and living in, the world. In terms of sustainability, then, the purpose of schools, broadly speaking, might be seen as stimulating young people's development of awareness and interest in relation to living sustainably,

with the hope (but not certainty) that this will give rise to social participation that can contribute, for example to the goals of greater social justice and human well-being, and the bolstering of the resilience of ecological systems. Further and higher education allow such ideas to be explored in much greater depth and sophistication and will likely have an emphasis on the resonance of these ideas in contemporary society and the workplace.

As we have seen, schools have been addressing such issues for over 40 years, in the main through the curriculum with some integrated work across subjects, and growing use of personal, social, health education and citizenship courses, and partnerships with external groups, all designed to enable students to develop more rounded and fuller sets of understandings and skills. There has also been a growth of more activist developments, particularly through clubs and eco/green councils, with a remit to effect change in (and sometimes beyond) the school in relation to management practice; for example, reducing energy and resource use, and increasing recycling and composting. The last few years have seen a growth, internationally, of similar developments in further and higher education, especially focused on students' campus experiences more generally, and has led to an increase in behaviour-change projects in relation to this.

But all this exposes a central question for those involved: at heart, are you really interested in educational or social outcomes? In what learners learn (broadly viewed), or what they *do*? This is a curriculum question, although not a particularly new one, that needs to be asked at a time when there is considerable social impetus to change individual behaviour, and the conscription of education to that end. Stables, in emphasising the role of institutions in "preparing people to make difficult decisions", privileges the "development of skills of critical thinking, dialogue and debate" above "content", stressing the iterative nature of learning, participation and decision-making through the life-span (Stables 2010: 594). However, education is most successful, perhaps, when it combines these elements. Vare and Scott have argued that it is helpful to think of two complementary approaches:

> ESD 1—Providing guidance about behaviours, shifts in habit, and ways of thinking about how we live now. This tends to be heavily content-focused, information-based, and grounded in everyday practice.
> ESD 2—Building students' capacity to think critically and develop abilities to make sound choices in the face of the inherent complexity and uncertainty of the future. This is much more dialogue and debate-oriented, and focused on controversial issues. (2007: 196; 2008)

ESD 1 promotes informed, skilled behaviours and ways of thinking where the need for this is deemed important by experts. This is about doing things *differently*. It is about greater efficiency: *level 1 learning*.

ESD 2 is building capacity to think critically about and beyond what experts say, and test out sustainable development ideas. This is about doing different *things*. It is about more effectiveness: *level 2 learning*.

Examples of ESD 1 include actions to be more efficient/less wasteful; (e.g. less greenhouse gas). All this is 'learning to be more sustainable' (or, usually, less *un*sustainable). This needs information and communication strategies, and is

exemplified by approaches such as *social marketing* where things are explained to people. But people do not always make rational decisions.

Examples of ESD 2 include thinking about how what 'being more sustainable' means. This may well need *information* and *communication*; but it also needs something more sophisticated through which people are able to get to grips with conflicting ideas and values.

ESD 1 fits with the received view of sustainable development as being expert-knowledge-driven; the role of the non-expert is to do as guided with as much grace as can be mustered. This is UNESCO's view—by and large. It is what is driving the Decade. ESD 2 embodies a different view of what sustainable development *is*. In this view, sustainable development does not only depend on learning; it is inherently a *learning process*. This leads to radically different definitions of sustainable development, such as that of Foster: a social learning process of improving the human condition which can be continued indefinitely without undermining itself.

ESD 2 fits this view of sustainable development, recognising that

- many problems lack precise specification
- what can be known in the present is not always adequate, and desired 'end-states' cannot be specified with confidence
- there are competing problem definitions, and participants have incompatible value-sets
- its meaning remains provisional—it has to be as much 'worked out' as 'carried out'.
- the complexity and uncertainty we face cannot be wished, legislated, or educated away
- learning's a choice, but change is sure.

Vare and Scott (2007) argue that ESD 1 and ESD 2 approaches are complementary because people need to have relevant subject matter to debate and critically examine in their own contexts, and because ESD 2, although open-ended, cannot exist in a vacuum. This, if well constructed, could also bring the behavioural and socially critical together in the context of a liberal approach.

All of the foregoing relates to student learning, but there is another dimension to these considerations with the idea that the school itself, as an *institution*, has to become sustainable. This example from England illustrates its radical nature:

> Sustainable development will not just be a subject in the classroom: it will be in its bricks and mortar and the way the school uses and even generates its own power. Our students won't just be told about sustainable development, they will see and work within a school that is a living, learning place in which to explore what a sustainable lifestyle means. (Department for Education and Skills (DfES) no date)

In this, a key sustainable schools' focus is that of the institution's becoming a model for activity in the community:

> Schools (...) are invited to become models of sustainable development for their communities ... turning issues like climate change, global justice and local quality of life into engaging learning opportunities for pupils—and a focus for action among the whole school community. (DfES 2006:3),

From a policy perspective, this duality and complementarity are not *necessarily* problematic, though they can be in practice. ESD1 is often straightforward for policy-makers to support, because it deals with concrete issues where outcomes (recycling, energy savings, fair trade adoption, reduced resource use, etc.) can be achieved quickly, with local NGOs ready uncritically to support all this. This is especially so where these map onto existing policy initiatives around, for example, welfare, saving energy, sustainable transport, waste, and international development. It is also easy to see that enthusiasm for this emphasis might, in an already busy curriculum, crowd out the other (i.e. ESD2) emphases, particularly as sustainable development can be hard to explain and there is a temptation to simplify the message to the point of completely diffusing it in order to get it across to busy professionals already heavily engaged with other priority aspects of government policy. Both are necessary, however, if education's contribution to sustainability is to be optimised. Martin et al.'s UK case study for UNESCO also explores these competing priorities.

4.4   Transformation, or Incremental Change?

Within the broad goals established by the UN General Assembly (2005), the sub-goals for the DESD at the national level were to:

- provide an opportunity for refining and promoting the vision of and transition to sustainable development through all forms of education, public awareness and training.
- give an enhanced profile to the important role of education and learning in sustainable development.

Its objectives were to:

  (i) facilitate networking, linkages, exchange and interaction among stakeholders in ESD;
 (ii) foster an increased quality of teaching and learning in education for sustainable development;
(iii) help countries make progress towards and attain the millennium development goals through ESD efforts;
(iv) provide countries with new opportunities to incorporate ESD into education reform efforts. (UNESCO 2005b: 6)

One of the strengths of ESD is the variation that is found from one educational context to another which has arisen from local interpretations and developments as the concept is shaped to fit, more or less comfortably, with existing policy and practice. Inevitably, this all involves accommodations with preferred ideological and epistemological dispositions. Equally inevitably, all interpretations of ESD rest on understandings of what sustainable development itself *is*. How could this be otherwise, even if the conceptual links are loose, or talked about in hushed tones

between consenting adults. This diversity of ESD, which is clear to see from a look at emerging practice, or any reading of the increasing number of journals that now cater for interested academics, is also a considerable weakness as it betrays a lack of shared understandings which, in turn, inhibit communication and collaboration. An aspect of this is that not all ESD is described *as* ESD, with a plethora of alternatives (EfS—education for sustainability, for example), some of which are supported by particular groups, sometimes to distance themselves from ESD which they see, variously, as too neo-liberal/pro-growth/conservative/capitalistic/'Western'/ etc., according to taste. As UNESCO notes:

> ESD is called by many names in national and local contexts. In some places, Environmental Education (EE) and other related "educations" (e.g. global education and climate change education) are defined and practiced to include socio-cultural and economic aspects alongside environmental aspects. (2013)

A number of dilemmas emerge from this confusion of language and goals. A particularly significant one is whether ESD should set out to have a transformative aim, or (merely) be focused on becoming a key component within the educational mainstream, attempting to change things between the margins and somewhere nearer the heart of things. If transformative, then it seems clear that it is institutions themselves that need to be transformed, and not just the educational opportunities they provide, otherwise developments will be at the mercy of leadership diktat or passing educational fashion. A question that immediately follows from this is whether educational systems need to be transformed in order that their embedded institutions can themselves have a chance of significant reforming. A further question then has to be: what chance is there of educational systems being really transformative if the national (and international) socio-political system within which *they* are embedded is not?

Put like that, it follows that a systems perspective is needed which acknowledges both embeddedness and interconnectivity. This is unsurprising given that we are considering sustainable development where systems thinking ought to be at its heart. A further question is whether a focus on ESD will be robust enough to make any of this more likely. Although for the UN, the overall goal of the DESD was to integrate the values inherent in sustainable development into all aspects of learning, there is nothing in this that suggests that the UN thinks that educational systems themselves should set out to be transformative in nature.

Sterling's (2001) outline of "sustainable education", underpinned by an ecological paradigm, is something that calls for such transformation in (and of) education. In relation to universities, Sterling illustrates the difference between these goals:

> (…) the effect of patterns of unsustainability on our current and future prospects is so pressing that the response of higher education should not be predicated only on the integration of sustainability into higher education, because this invites a limited, adaptive, response. Rather, (…) we need to see the relationship the other way round—that is, the necessary transformation of higher education towards the integrative and more whole state implied by a systemic view of sustainability in education and society, however difficult this may be to realise. (2004: 49–70)

In a later work, Sterling (2012) takes a broader view and invokes the arguments of Rosen et al. (2010) and Clark (1989) who see that nothing less than "a change of cultural worldview" (Rosen), and "conscious social change" (Clark) will do if we are to escape unsustainability (see also Sterling et al. (2013) for a much fuller treatment of these issues). Such transformative foci provide unparalleled contexts for useful learning experiences, which many would like to see as transformative in themselves, at least for the individual learner. Webster and Johnson (2009) make a similar set of arguments in relation to schools, and look to their becoming, through their institutional practice, restorative of both natural and social capital (Daly 1973; Meadows 1998). This has been elaborated upon by Scott (2013) in terms of stages of institutional development for a school that bring together student learning, leadership, and the enhancement of social and natural capital.

But can institutions be reformed in this way in the absence of supporting frameworks at the system and whole-society level? Mary Clark (1989) argues that in Western history there have only been two major periods where societies deliberately critiqued (and re-educated) themselves, creating new worldviews. The first was in the Greek city states (500–400 BC) when philosophers pursued new lines of thought, and social action emerged. The second was the Renaissance and Enlightenment when Western culture, through its natural and social philosophers, subjected itself to critical thought and renewal. Here, the result was the modern worldview that many (for example, Chet Bowers 2013) believe is implicated in the global socio-environmental crisis. Clark (1989: 235) argues that we need once again to "collectively create a new worldview that curbs ecological and social exploitation, and recreates social meaning", seeing this process as a society-wide phenomenon, and not something that can be entrusted to schools or to further, and higher education. This is a distinction and emphasis that Stables (op. cit.) also makes in distinguishing between formal education and "the learning society" in the context of needing to address these existential issues.

From a policy perspective, of course, a transformative stance is difficult to mandate directly for two main reasons: (i) there is evidence (Webster and Johnson) that suggests that institutions have to develop transformative volition and capability within themselves which may involve progressive stages of transformation; (ii) it is hard to justify changing educational policy in the absence of congruent changes to other policies, which implies at least some degree of collective agreement at the level of society and government; this, in turn, amounts, to some degree, to a transformation *of* society and government. The recent Martin et al. (2013) case study illustrates something of the difficult dynamics of this, across the different jurisdictions within the UK.

Sterling (2004) identified four possible responses to the challenge of sustainable development that can be:

A. null—no response needed
B. bolt-on—adding to what is done, at the margins
C. build-in—integrating, more centrally, into what is done currently
D. whole-system redesign—changing what is done to create a new system based on different principles (2004: 58)

. . . and it was this which informed the recent Webster and Johnson (2009) and Scott (2013) analyses. The latter sees the necessity of a progression of sorts between what are seen as developmental stages where [B] and [C] are more akin to emergent emphases than distinct positions, and are very much easier to establish than [D], although it is difficult to see how [D] could be achieved without progressing through [C] which itself probably needs [B] as a stimulus.

As noted, we might posit that these might be attempted at three principal levels:

1. *Institutional*—a school, college or university and everything that happens in it
2. *System*—all institutions of one type (e.g. schools) in a country
3. *National*—the government's view of sustainable development informs its entire thinking and action in relation to sub-systems, such as universities.

In terms of a whole institution approach, there is much that can be done even if it is not commensurate with shifts at the system or national levels, and the stimuli that can go upwards within a nested system to influence change at the next level should not be discounted. Indeed, real change probably depends on it. In the absence of directive, downward pressures, however, there will be significant limits on what is possible because of the mismatch between vision, purposes, etc., not to mention financial incentives. For example, no matter how 'sustainable' a school manages to be in restorative terms, if national examinations (a system level phenomena not much influenced *by* schools) are unreformed, then these will act as a considerable brake on what's possible in terms of student learning. Similarly, national curricula or legislative aims can be shaded by school-interpretation but not coloured in completely. And the financing of an individual school within a system level approach would likely be more permissive and persuasive of change than where this is missing.

A real example of this is in England where the Higher Education Funding Council (Hefce) has had funding schemes in place for almost 10 years which promote and reward institutional foci on sustainable development (particularly carbon-reduction). However, owing to traditions to do with academic freedom, it does not do this in relation to curricula. Instead it franchises this responsibility to other organisations that do not share the Council's vision or understanding, and which focus on ESD rather than on sustainable development. However, an ESD focus is not the same as the sustainable development one, which Sterling, Clark, and Webster and Johnson are writing about.

UNESCO's own analysis of progress through the Decade points to a number of examples of all this in relation to ESD. For example, in Bhutan . . .

> ESD/GNH (Gross National Happiness) has been adopted as a national priority. [It] is an integral part of the performance management system that draws a lot of inputs from the school self-assessment. The school self-assessment tools have been oriented to take in GNH/ESD values and process. All schools make GNH/ESD plans and review these plans bi-annually. (2012: 73)

. . . although what results from all this is quite unclear.

Eco-Schools is cited as an example of a *whole-school approach to sustainability*, but Eco-Schools is only working with individual schools to help them shift focus at their own pace, and at the margins of their activity, and the award of a green flag has

nothing necessarily to do with whole-school re-design in relation to sustainable development. In a similar vein, the *Sustainability and Education Academy* at York University, Canada, is cited by UNESCO as a *whole-system approach to sustainability*. But this is only an example of a leadership development programme that supports the creation of a culture of sustainable development. Like all such programmes round the world, its existence is not evidence *of* the operation *of* that culture.

More encouragingly, prima facie at least, Manitoba's education system is highlighted as somewhere where

> the philosophy of sustainability and employment of processes contribution (*sic*) to student engagement have been embedded in [the school division] for over 20 years even before the term ESD was coined. The larger scale ESD movements and the work of Manitoba Education has provided division staff with new evaluative frameworks to work with, professional development opportunities and resources. (UNESCO 2012: 74)

. . . but, again, new frames and approaches and resources are not the same as changed practice or re-orientated learning. Echoing the *Expert Review of Literature on Processes and Learning for Sustainable Development* (Tilbury 2011), the 2012 UNESCO report highlights:

> (. . .) a number of case studies of "whole-system engagement" (. . .) a number of concrete interactive methods and tools (e.g. values clarification techniques, critical incidents, debates, reflexive account, asking critically reflexive questions) that have not surfaced in this report's empirical review but have found their way in[to] ESD-related activities. Clearly, part of the support of professional development for whole-system engagement will consist in facilitating professional networks and providing tools and methods congruent with the proposed (or suggested) paradigm shift. (2012: 76)

Indeed it will, but "whole-system engagement", which is as loose a term as you would want to find, is not the same as "whole-system redesign" in Sterling's sense, or a new worldview (in Clark's). Each of these examples may well be some sort of indicator of the development of a focus on sustainability, but that is all. It seems unfortunate to claim more for them than they warrant.

Actually, it is more than unfortunate as it suggests that there are no compelling examples to be had. Indeed, that does seem to be the case. My own first choice of an educational system that is developing a whole-school-system approach (which might prove to be a re-design) would be Scotland (Martin et al. 2013, give a good account of this), and my first choice for a university would be the University of British Columbia (UBC) which sets out four graduate attributes whereby the graduate: demonstrates (i) holistic systems thinking and (ii) sustainability knowledge; (iii) is aware of, and integrates across, intellectual constructs; and (iv) acts to create positive change (UBC 2011).

One step on the road to re-orientation might well be the adoption of high-level aims that express the importance of sustainable development. For example, according to an expert panel established by the English Education ministry to advise on curriculum reform (HMG 2011), the 2004 school national core curriculum in Finland includes a set of underlying values of education. These are:

> human rights, equality, democracy, natural diversity, preservation of environmental viability, and the endorsement of multiculturalism. (2011: 63)

Similarly, New Zealand expresses its vision for schools in terms of:

> young people who will seize the opportunities offered by new knowledge and technologies to secure a sustainable social, cultural, economic, and environmental future for our country. (2011: 15)

The expert panel's report noted this:

> (…) many of the jurisdictions that we have considered that have recently conducted reviews of their curricula have introduced a high-level reference to sustainability. With this in mind and in the light of the Government's adoption of ambitious carbon reduction targets to 2027 we suggest the Government considers a recommendation that the school curriculum should also contribute to environmental "stewardship". (2011: 15–16)

Despite considerable dissatisfaction with the limitations of "stewardship", much NGO and practitioner effort then went into lobbying government to adopt the recommendations of the panel which included the promotion of "understanding of sustainability in the stewardship of resources locally, nationally and globally." (HMG 2011: 17) Alas, even such a modest step proved too great an effort for government, and those (many) schools interested in a transformation to address sustainability are left to struggle on without high-level encouragement or support. Pragmatically, this could be all that is possible for most places. More heretically, of course, it could be all that is really necessary for significant change to occur, provided you are determined to lead it.

4.5 End Words

At the heart of the arguments of this chapter are three particular ideas. These are summarized here:

1. If sustainable development only makes sense *as* learning, then effective ESD must always be a contribution *to* sustainable development, and our understanding of sustainable development will determine how we think about ESD, and, as Sterling (Pers. Com.) reminds us in a paper for UNESCO's celebratory end-of-Decade conference, about education itself. It follows that, for ESD to have meaning, and therefore effect, it needs to be grounded within a conceptual framing of sustainable development itself. There are, of course, different conceptual framings of sustainable development, and so more than one approach to ESD will endure, and even UNESCO acknowledges that some of these will continue to resemble environmental and development education. This is as it needs to be in free societies as we struggle to make sense of what we have done, and keep on doing, to the biosphere's systems, flows, cycles and sinks.

   A good educationally-critical sort of question to ask a teacher, trainer or lecturer who says they are involved in ESD is how what they are doing relates, and *contributes*, to sustainable development. If they cannot provide a convincing answer, then scepticism is in order about whether they know what they are

doing, and whether learners will benefit as much as they might expect, or at all. Another question would be to ask whether they think of ESD as a process or something to be taught, with appropriate conclusions being drawn if the response is the second of these.

2. Educational institutions need to prioritise student learning over institutional, behaviour or social change whilst making use of any such change to support and broaden that learning. In this sense it is fine for a school, college or university to encourage its students to save energy, create less waste, or get involved with initiatives such as fair trade (or *Fairtrade*), provided that these are developed with student learning in mind, including an umbilical link to their actual studies. To do otherwise is to forget why educational institutions exist. Being restorative of social or natural capital is laudable, but not if it neglects or negates the development of appropriate human capital, i.e. student learning. Doing all this in collaboration with students, and with the communities within which institutions are socially, economically and environmentally embedded, will aid everyone's learning, and perhaps even sustainable development.

3. Being socio-economically transformative remains an ideal, with being restorative of natural and social capital examples of would-be welcome outcomes. There is, however, little sign of such transformation's being achieved any time soon, or, indeed, that UNESCO is particularly convinced that it's a necessary goal for ESD. This is, perhaps, just as well as the evidence that ESD could lead transformation is not convincing. Indeed, why should it be, when it is a focus on sustainable development that is needed for a transformative effect, not a process of education such as ESD. It does seem persuasive, however, that a focus on transformation, per se, is not necessary to make progress towards that goal, and that it is small-scale, on-the-ground developments that are needed to create the conditions *for* transformation. The ground-breaking work of the Ellen MacArthur Foundation (EMF 2012), with its *circular economy* focus, is an example of such an initiative. Although not couched in the language of sustainable development, this *is* transformative in nature, and it is setting about its educational business by working *within* business and educational organisations.

All these seem important as the ESD Decade morphs into post-Decade activity, and MDGs (Millennium Development Goals) become SDGs (Sustainability Development Goals) although they are not obviously significant to the United Nations. UN Secretary-General Ban Ki-moon has initiated a number of processes to help devise the SDGs so as to maximise benefit for humanity during the years 2015–2030. One of these, the sustainable development solutions network (SDSN) has identified ten priority challenges of sustainable development:

1. End extreme poverty including hunger
2. Achieve development within planetary boundaries
3. Ensure Effective Learning for All Children and Youth for Life and Livelihood
4. Achieve Gender Equality, Social Inclusion, and Human Rights for All
5. Achieve Health and Wellbeing at All Ages
6. Improve Agriculture Systems and Raise Rural Prosperity

7. Empower Inclusive, Productive, and Resilient Cities
8. Curb Human-Induced Climate Change and Ensure Clean Energy for All
9. Secure Ecosystem Services and Biodiversity, Ensure Good Management of Water and Other Natural Resources
10. Transform Governance for Sustainable Development (UN 2013b: ix).

. . . which, the report says, could form the basis for the SDGs that would apply to all countries up to 2030.

This report has nothing to say about ESD, although there is a passing reference to "education in sustainable development" (see below). There are, however, numerous references to learning, including the idea that children everywhere should actually learn the SDGs to help them understand the challenges that they will confront as adults. Section 3 of the report, where reference to ESD might have been anticipated, is really an updating of the UN's *Education for All* goals. But if you want to see how little the UN understands about sustainable development, then turn to Annex 2 which sets out educational statements, disaggregated across the "four dimensions of sustainable development" [sic]. These are . . .

	Economic development and eradication of poverty	Social inclusion	Environmental sustainability	Governance including peace and security
GOAL 3 Ensure effective learning for all children and youth for life and livelihood	Effective learning is critical for creating job opportunities and livelihoods for people at all ages, which in turn drives economic development	Effective learning is critical for creating job opportunities and livelihoods for people at all ages, which in turn promotes social inclusion	Improved education and awareness, including education in sustainable development, will generate innovation and leadership for environmental sustainability	Educated and informed citizens will contribute to and uphold good governance and lower the risk of conflict and insecurity

It is hard to know what to make of such an unsophisticated confection, save that the UN takes no notice of UNESCO, or the Decade, and has an astoundingly naïve view of sustainable development which contrasts poorly with what we had from Oxfam at the start of this chapter. All this is hugely disappointing, but instructive for those activists who promote ESD in that it is not ESD that is important to the UN; rather it is sustainable development and what it terms effective learning. It follows that promoting an interest in learning our way into the future in the post-Decade decade will be better done if the focus is on what students, academics and teachers are themselves interested in, and not what ESD orthodoxies tell them they really ought to be focused on. Then there might be more young, and not so young, people whose learning engages with existential issues—such as the future of life on the planet. Without this, there is the risk that we shall all continue to be ignored by those whose job it is to run mainstream education institutions and systems. They have, after all, had considerable practice at doing just this. Happily, however, there

is emerging evidence that young people do take seriously the existential dilemma that we face. See, for example, Butters (2012), Gayford (2009), Hope (2013), International Institute for Sustainable Development (IISD 2013), and United Nations Environment Programme (UNEP 2011), and the on-going surveys of students entering higher education in the UK, where 67 % of them (Drayson et al. 2012) said that sustainability should be covered by their university through a re-framing of curriculum. This seems a suitably positive note on which to end.

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