

Burning Issues in Primary Education

Educating for sustainability: a guide for primary schools

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Introduction

The demands placed on teachers and others who work in schools, or govern their provision, means that there is often too little time to consider the aims and purposes of education. Staff meetings, training days and governors meetings are generally preoccupied with short term and practical matters of school management and rarely is there an opportunity to reflect and act on longer term and more theoretical issues relating to the school's ethos and goals.

This guide encourages those engaged in primary education to engage in such reflection and action. It argues that much of what currently happens in primary schools supports unsustainable forms of development and suggests reforms that would allow them to contribute to more sustainable futures. These reforms hold the promise of healthier pupils and healthier schools, more closely linked to healthier communities and a healthier world. They reveal contradictions in the Government's policies on education and offer schools and teachers new opportunities for curriculum and professional development.

The argument is presented in three stages each linked to a staff development activity and the Teachers' Standards Framework (www.dfes.gov.uk/teachers/professional_development). Since the guide is written to encourage teachers to exercise leadership in relation to education for sustainable development (ESD), the activities make some reference to the standards and role expectations for subject leaders listed in the framework. After a consideration of the aims of primary education in changing times, there is guidance on delivering education for sustainable development through the taught curriculum, and through the 'greening' of the school and the development of community links. Readers are referred to many internet sites and links to these can be found on the National Primary Trust website (www.npt.org.uk).

Primary education in changing times

Modern primary education

Stepping back and seeing schools afresh means recognising that state education is a product of modernity. This form of social organisation began in Europe over three hundred years ago and spread, with colonialism and imperialism, to the rest of the world. Modernity was shaped by the rise of such 'isms' as industrialism, capitalism, liberalism, and rationalism, and its foremost thinkers associated education with progress via the concepts of enlightenment and emancipation. Modern education claimed to enlighten people with new knowledge, skills and values so that they could improve themselves and their world and so realise new freedoms. It was closely linked to the modern story or 'grand narrative' of human progress and development that was to be realised through the application of science and democracy to the rational control of nature and society.

While modernity has delivered varying amounts of enlightenment, emancipation and development to different populations, it has failed to fully realise its potential and spread its benefits to all. The limitations of prevailing models of democracy mean that powers to generate wealth and welfare continue to be controlled by minorities and their priorities continue to shape modern institutions and decision-making. Consequently much modern schooling continues to serve not to enlighten and emancipate young people, but to train and socialise them so that they acquire 'useful' skills and 'know their place' in the world. Modern primary schooling continues to take different forms, largely related to the socio-economic and cultural backgrounds of pupils, and the state remains reluctant to provide levels of funding that would ensure high quality provision for all.

Modern education sought to fit the majority of children into communities defined by relative proximity, homogeneity and familiarity, instilling respect for God, family and nation, and prepared and sorted pupils for futures that were more or less certain and predictable. Modern forms and divisions of knowledge shaped the curriculum and pupils were encouraged to believe the application of modern science,

technology, democracy and bureaucracy would bring continuing progress and development. Modern curriculum knowledge also separated the study of nature from that of society, and awarded academic knowledge greater status than the 'common sense' knowledge people use in their everyday lives. Progressive educators sought to make primary schooling less harsh and more child centred, but their ideas regarding 'education according to nature' can be seen as romantic or idealistic.

Modernity, supported by modern education has undoubtedly brought significant benefits, particularly to the 'contented majorities' living in the 'advanced capitalist economies' of the North. These economies, in which powerful minorities control processes of development and underdevelopment, do however continue to accumulate manufactured or productive capital, at the expense of human, ecological and social capital. The 'wants' of powerful minorities, together with those of the 'contented majorities' on whom they depend for electoral support, are generally put before the needs of the poor, the rest of nature, and viable communities (both locally and throughout the world). This results in poverty, environmental degradation, and physical and mental ill health, which threaten the long term viability of modern forms of development. Such forms of development cannot last indefinitely and there is a mounting crisis of sustainability. This crisis explains many of the problems confronting primary schools:

<i>neglect of human capital</i>	Increasing numbers of children live in relative poverty and do not receive an adequate diet or mental stimulation at home. Others enjoy material affluence but their parents find it difficult or impossible to give them the time, love and attention they require to develop their potential.
<i>neglect of ecological capital</i>	More children eat contaminated food, breath polluted air and are less likely to experience the 'awe and wonder' of contact with environments rich in biodiversity.
<i>neglect of social capital</i>	Fewer children have the support of an extended family and supportive community. Stress, disruptive behaviour, crime, and mental illness are on the increase.

Such problems are compounded by the growing cynicism and apathy towards democracy displayed by some teachers and parents who have little confidence in political institutions and politicians and feel that real social and educational alternatives are no longer possible. The increasing demands of the job; more rigorous assessment of performance; the erosion of theory and reflection in teacher education; and continuing attacks from politicians; all combine to deter most teachers from seeking radical answers to the problems besetting schools. Many belong to the 'contented majority' and shopping trips and foreign holidays serve to compensate for stressful working lives and distract attention from everyday realities.

Post-modern primary education

The prospect of linking primary education to more sustainable forms of development has become clearer with the advent of post-modernity. New information, communication and biotechnologies now allow new forms of production and consumption, new work practices, new social solidarities, and new forms of culture and identity. These allow post-industrial societies in which economic growth no longer depends on increased use of energy and non-renewable resources and increased production of waste. Post-industrial economies can work with rather than against the cycles of nature and may grow by using less energy and materials, a process called ecological modernisation.

The post-modern world that is emerging is one in which horizontal networks coexist with vertical hierarchies and global flows of energy, material and information shape our lives. Globalisation means that we are now members of diverse communities characterised by a variety of scales, heterogeneity, unfamiliarity and risk. The family, workplace and nation are no longer such secure sources of affiliation and identity, and a new range of real and virtual communities offers alternatives. At the same time futures are now characterised by changing expectations, unpredictability and risk. Many of the

assumptions that underpinned modern education no longer hold and need to be rethought and redesigned for post-modern times.

Central to such rethinking is the need to link education to sustainable forms of development. New and existing technologies can allow us to conserve and reconstruct ecological capital and provide welfare (manufactured, human, and social capital) for all. But this can only happen if the world's people are able to exercise democratic control or governance over economic production and development so that their common interest in sustainability can find expression.

<i>some problems associated with unsustainable development</i>	poverty social exclusion climate change loss of biodiversity terrorism mental ill health
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To solve such problems existing modern institutions will need to be reformed and new post-modern institutions established. Flows of energy, material and information will have to be regulated in ways that foster sustainable development and this will require laws, institutions, and democratic decision making processes, which allow the world's people to effectively care for one another, future generations, and the rest of nature. Democratic politics combined with global governance (cosmopolitan democracy) is the key to sustainability in post-modern times and there is evidence that cosmopolitan democrats in the new social movements are gradually convincing mainstream politicians of this.

Post-modern primary education should be about beginning to provide children with the enlightenment they will need to live and flourish in a rapidly changing world. Above all it should be an education linked to realistic narratives of hope: to stories of communities throughout the world finding different but co-ordinated routes to sustainability in ways that deliver social justice and enhanced freedoms for all. It should begin to explore and demonstrate how new technologies and forms of governance (in the family, school, workplace, local council, European parliament, multinational corporation, United Nations, etc) can deliver sustainability along with new citizenship rights and responsibilities, and how sustainability allows new economies of time and nature, linked to new forms of welfare and new meanings of progress. This sounds a tall order that is beyond the abilities of children, but later sections of this publication suggest how it might be done.

Sustainable development

Before they can link primary education to more sustainable forms of development teachers should understand that advocates of such development adopt different ethical and political positions. As far as values are concerned they are more nature or society centred, with some claiming that nature has 'intrinsic' value irrespective of people and others claiming that while all values stem from people, it is in society's own interests to balance the (ecological, economic, scientific, aesthetic, existence) values we derive from nature and not pursue economic values at the expense of others. At the root of sustainability lies

- the duty of care towards other human beings, future generations, and the rest of nature.

The limited resources and services that the earth's ecological systems can supply should be fairly shared amongst people and other living things, and should not be used in ways that are likely to reduce their supply in the future. Political beliefs and parties give differing attention to the five dimensions of sustainable development.

<i>ecological sustainability</i>	Conserving critical ecological capital on which all life and economic production depends.
<i>economic sustainability</i>	Generating wealth and well being in a continuous way without periods of 'boom and bust'.

<i>social sustainability</i>	Meeting everyone's basic needs and reducing inequalities in ways that promote social justice and reduce social conflict.
<i>cultural sustainability</i>	Drawing on culturally appropriate knowledge and promoting cultural diversity.
<i>personal sustainability</i>	Promoting people's physical and mental health and fostering a state of well being within themselves and with the rest of the world.

Politicians disagree as to whether sustainable development is a matter to be left to experts or should involve public participation in decision-making. Those on the right are generally most concerned about economic sustainability whilst those on the left seek to balance economic and social sustainability. Both have problems in reconciling economic growth in the global capitalist economy with ecological sustainability. It can be argued that only green (or green left) politicians and parties have a real grasp of all five dimensions of sustainability and their policy implications. Clearly political and citizenship education are central to education for sustainable development and awareness and understanding of different interpretations of sustainability should begin from an early age.

Michael Jacobs suggests that the NGO community (non-governmental organisations campaigning on environment and development issues) agree on the core meanings of sustainable development:

They are that the environment must be protected in such a way as to preserve essential ecosystem functions and to provide for the well-being of future generations; that environmental and economic policy must be integrated; and that the goal of policy should be an improvement in the overall quality of life, not just income growth; that poverty must be ended and resources distributed more equally; and that all sections of society must be involved in decision making.

(Jacobs, 1996, 26)

Web sites on sustainable development include:

<http://www.sd-commission.gov.uk/> and <http://www.sustainable-development.gov.uk/> .

Activity 1: promoting values related to sustainable development

While it is strictly a cross-curricula theme rather than a subject, it is reasonable to expect one teacher in the primary school to exercise leadership for ESD. The three activities in this booklet therefore apply the standards and role expectations for subject leaders listed in the CPD framework.

Activity 1 asks teachers and others involved in the life of the school to reflect on how the Government has responded to the challenge of post-modernity and sustainable development through its strategy for sustainable development and its revision of the national curriculum in England. Ideally the 'subject leader' or co-ordinator for ESD will play the lead role in encouraging reflection by staff, parents, governors, and others. S/he will wish to provide participants with copies of the activity.

Activity 1 is designed to help:

- establish a clear, shared understanding of the importance and role of the subject in contributing to pupils' spiritual, moral, cultural, mental and physical development, and in preparing pupils for the opportunities, responsibilities and experiences of adult life (CPD framework, strategic leadership).

The UK Government maintains that sustainable development is *about ensuring a better quality of life for everyone now and for generations to come* (Sustainable Development Strategy, July 1999 <http://www.sustainable-development.gov.uk/>). Realising sustainable development means meeting four objectives at the same time, in the UK and the world as a whole:

- social progress that recognises the needs of everyone;
- effective protection of the environment;
- prudent use of natural resources;
- maintenance of high and stable levels of economic growth and employment.

	To what extent are these four objectives complementary or contradictory?
Questions for group to address	What kinds of economic growth and employment allow all four to be complementary? Give examples of government policies that support and contradict these objectives - include policies on education and child welfare.

Consider the statement of aims and values supporting the NC in England (http://www.nc.uk.net/statement_values.html), which includes:

“Education is also a route to equality of opportunity for all, a healthy and just democracy, a productive economy, and sustainable development. Education should reflect the enduring values that contribute to these ends. These include valuing ourselves, our families and other relationships, the wider groups to which we belong, the diversity in our society and the environment in which we live ... At the same time, education must enable us to respond positively to the opportunities and challenges of the rapidly changing world in which we live and work. In particular, we need to be prepared to engage as individuals, parents, workers and citizens with economic, social and cultural change, including the continued globalisation of the economy and society, with new work and leisure patterns and with the rapid expansion of communication technologies.”

	Is education the primary route to sustainable development or one process that along with other processes helps society on its way?
More questions to address	What are these other processes that maybe more important than education in promoting sustainable development? Why may politicians be inclined to put too much apparent faith in education as a route to sustainable development? In what sense should we and pupils in schools value the environment in which we live? What particular meaning of ‘environment’ did the writers have in mind? How should we prepare young people to engage with ‘the continued globalisation of the economy and society’? If this is to be a critical engagement, what should they know and understand about globalisation and its impact on peoples and environments around the world?

Now consider the statement of values relating the environment:

We value the environment, both natural and shaped by humanity, as the basis of life and a source of wonder and inspiration. On the basis of these values, we should:

- *accept our responsibility to maintain a sustainable environment for future generations,*
- *understand the place of human beings within nature,*
- *understand our responsibilities for other species,*
- *ensure that development can be justified,*
- *preserve balance and diversity in nature wherever possible,*
- *preserve areas of beauty and interest for future generations,*
- *repair, wherever possible, habitats damaged by human development and other means.*

Are there any natural environments, entirely untouched by society?

What is unnatural about people or humanity?

Do all environments provide a basis for life and a source of wonder and inspiration?

What is a sustainable environment? Which of its components and processes should we sustain (or help ecological processes to sustain) and why?

What is 'the place' of human beings within nature?

To whom or on what grounds should development be justified?

What criteria should be used in deciding 'beauty and interest for future generations'?

Describe a primary school that is seeking to realise these values. What indicators might it use to decide whether or not it is successful?

Education for sustainable development in the taught curriculum

There is no real shortage of curriculum materials, lesson plans, and classroom activities for teachers wishing to educate for sustainable development. This section makes reference to a sample of the resources on the internet that embody its recommendations. It aims to provide some anchor points that should enable teachers to evaluate such material, use it more constructively, and increasingly plan and produce their own materials based on the needs of their pupils and community. Six anchor points will be suggested and each will be linked to primary curriculum subjects and/or cross-curricular themes.

Overcoming nature and society dualism (science and ICT)

Modern societies alienated people from the rest of nature as industrialisation and urbanisation separated them from the land. One cause of this alienation is the division of academic knowledge (and school subjects) into those concerned with the 'natural' world (the natural sciences) and those concerned with

the social world (the social sciences). Such dualism encourages the belief that the bio-physical world of ecological relations is separate from society and social relations. While the biological world did develop out of the physical world, and the social world out of the bio-physical world, the bio-physical and social worlds have become one world. Our own bodies and everything that surrounds them (the environment) is the product of both ecological and social relations and processes. The bodies we inhabit, the water we drink, the woods we visit, the cities we live in, are complex hybrids and there is nowhere on the surface of the earth where ecological systems are untouched by human influence. Indeed everything can be regarded as natural or nature in that there is nothing un-natural about people or indeed the cities and culture they create.

Such a philosophical diversion is relevant because primary schools have long celebrated a nature separate from society. The nature walk, the nature table, the science lesson, the assembly, too often suggest that nature is something separate from society to be contacted, experienced, investigated and manipulated, or worshipped. While mainstream primary education has been guilty of such dualism it is also a feature of progressivism. By suggesting children should be educated 'according to nature' progressive educators idealised or romanticised a nature outside society and similar ideas are current today amongst those environmental educators who advocate ecological or earth education.

If nature is indeed a hybrid and is to varying extents always the product of ecological and social structures and processes, the key question for humanity is by what means, and to what ends, is human nature constructing nature alongside the rest of nature? The challenge of sustainability is to reconnect the development or evolution of the bio-physical and social worlds with appropriate technology governed by appropriate ethics, laws, institutions and ideas. This requires a primary curriculum that integrates knowledge and school subjects so that pupils can study science and technology in a social context.

Renewable energy is a topic which allows such study. Teachers can find a renewable energy trail for KS2 pupils at www.dti.gov.uk/renewable/ed_pack and the Solar School, a site designed to promote understanding of renewables, at <http://das.ee.unsw.edu.au/%7Esolar/index.html>. The British Wind Energy Association (www.britishwindenergy.co.uk) produces downloadable booklets for KS1 and KS2 teachers, and the KS1 booklet makes the case for wind power and supports this with information, activity and resource sheets. Activity 4, Why Use Windpower?, involves the children matching statements to pictures and recognising that investment in different forms of energy is a social or political choice.

Basic ecology, ecological limits and ecological footprints (science, numeracy, literacy)

Human activity depends on energy and material flows within ecological systems. Ecosystems are powered by sunlight, build living material as energy moves through food chains, and recycle their wastes. They supply economic systems with a renewable supply of matter and energy in such forms as timber, draught animals, or fish stocks, and past environmental conditions have resulted in some of this being stored in such non-renewable forms as coal or oil. Ecosystems also provide services by cleaning air and water, stabilizing soils, regulating climate, controlling pests, recycling wastes, and acting as reservoirs of genetic information. One estimate suggests these resources and services are worth \$US 30 million million a year.

Children should be taught basic ecology in the primary school:

*basic
ecology
for
primary
schools*

How ecosystems work to produce material and store energy.
Productivity in ecosystems is limited.
People can 'manage' ecosystems to increase their productivity.
There are limits to such management.
Mismanagement can have serious consequences.

The World Wide Fund for Nature suggests that people take for their use somewhere between one quarter and one half of all plant material that grows on the earth each year, and that between 1970 and 2000 they destroyed more than 30% of the world's ecological wealth (<http://www.panda.org/livingplanet/>).

Children's awareness of ecological limits (realities ultimately imposed by the laws of thermodynamics) is perhaps best developed by practical experience of growing crops or talking to gardeners and farmers. There is a limit to the food, fibre or energy crops that can be grown on a fixed area of land and attempts to increase yields by removing limiting factors (as with artificial fertilisers) may have unintended consequences. Similarly children are likely to understand limits on the use of renewable resources (eg over-fishing) through the use of simple simulation games or the analogy to savings in the bank. Living on interest is sustainable but living on capital is not.

Modern lifestyles depend on fossil fuels and productive land and water throughout the world that produces the resources we consume and treats our waste. Our ecological footprint is the area of land and water required for the sustainable production of all the ecological resources and services that enable us to live in the way we do with particular forms of technology and a particular standard of living. The ecological footprint of the average US citizen (5.1 ha) is over twelve times larger than that of the average Indian (0.4 ha) and over three times larger than each global citizen's fair earthshare (1.5 ha), the amount of ecologically productive land available to each person on earth. Ecological footprints clearly raise issues of social and ecological justice for the larger the footprints of the rich, the more the poor and other species are deprived of resources.

Lesson ideas

Represent one person's fair Earthshare by drawing it out on the school field: a circle 138 metres in diameter of which one sixth would be arable land, the rest would be pasture, forest, wilderness, and built-up area.

Draw out (to scale on paper) the size of a fair Earthshare in 1900 (5.6 ha), 1950 (3.0 ha.) and 1995 (1.5 ha.).

Population growth is the key factor, together with the degradation of ecologically productive land, in explaining this decline, but older pupils should realise that providing the poor with a fair share of land and resources is critical to improving their security and health and thereby reducing the probable size of their families.

Clearly living sustainably within ecological limits and one's fair earthshare means that the majority of families in Britain should use energy and resources far more efficiently and make do with less (in most cases much less!). While there are computer programs that enable households and schools to calculate their footprints most are beyond the comprehension and ability of primary pupils. A calculator at <http://www.rprogress.org/programs/sustainability/links.html> does however provide a very simple way of discovering how many planets would be needed to support everyone in the world living in the same way as the person answering the questions.

The Global Footprints project (<http://www.globalfootprints.org/>) developed by a consortium of development education centres working with primary schools, includes amongst its aims that of creating a more sustainable future by educating tomorrow's adults so that they are able to *tread more lightly and carefully and become aware of the footprints they leave around the globe*. The projects activities promote numeracy, literacy and global citizenship and seek to *empower children to take action to reduce or improve their impact in their schools and communities and make the link between the local and the global*. The project's homepage provides a child's definition of a global footprint: *a footprint means pressing down and global means world, so 'global footprint' means pressing down on the world and we don't want to press too hard*.

While the project has conceptualised global footprints somewhat more widely and differently than ecological footprints, and its focus on globalisation and global citizenship will be considered in section three, two of its activities for Yrs 3 and 4 do illustrate the potential of exploring ecological limits and footprints in the primary school.

Ten Litre Limit is a capacity activity involving dividing up ten litres of water between different daily uses and presenting the information in a bar chart (National Numeracy Strategy Y3). Ten litres of water is the average daily amount used per person in the poorest countries of the world. Through this activity children can develop a sense of empathy towards those in the world who have a very limited supply of water. In Simply Divine a fair trade chocolate (Divine) advert is used as the focus for a reading comprehension activity exploring how information about the product is presented (National Literacy Strategy Y4 Term 3). A follow up writing activity is suggested where children design their own poster to advertise a fair trade food product. Through the activity children can learn about the benefits of fair trade to Southern food producers and how to take positive actions which help ensure greater social justice.

The place of human beings in nature (religious education)

Children should begin to understand from an early age that the human condition is contradictory in that we are both part of nature yet apart from nature. People are part of ecological relations (members of a biological species, dependent on ecological resources and resources to supply their needs) yet partly independent of such relations as part of social relations (they have powers of language and technology that enable them to transform the nature that surrounds them). Put more simply, we are animals but rather unique animals.

It follows from our contradictory position that we experience both the pull of nature, or the desire to live according to nature, and the pull of culture, or the desire to rise above the harsh realities of nature. In finding sustainable ways to live we have to balance these two attractions, exercising care or stewardship towards the rest of nature as we free ourselves from scarcity, disease and risk and create conditions in which we can fulfil our potential. Another way of thinking about this challenge has already been mentioned. We should balance the economic or instrumental values we place on (and extract from) nature with ecological, aesthetic, scientific and existence values. Children should understand that forests have value as an economic resource (eg for timber or recreation), and as regulators of climate and flooding; as inspiration to poets and painters; and as scientific laboratories rich in biodiversity. Their plants and animals may also have a right to exist alongside people.

Since people can apply their growing understanding of the world (enlightenment) to the regulation of ecological and social relations, by means of appropriate technology and democratic forms of governance and citizenship, there are grounds for cautious optimism regarding progress towards more sustainable futures. The curriculum should celebrate through the humanities, sciences and arts, people's ability to create high quality environments that reflect the five dimensions of sustainable development. It should also develop the potential of religious education to explore the teachings of different faiths regarding the place of human beings within nature.

The Religious Education and Environment Programme (<http://www.reep.org>) has KS2 activities that allow pupils to explore environmental problems and discuss the perspectives of the world's religions on the issues raised. After a simulation game about the deforestation of Easter Island, pupils discuss the Islamic story 'The Holy Man and the Magic Bowl'; the Jewish folk-tale 'Concerning the Poor Man Covetous'; and India's Chiko (tree hugging) movement inspired by Hinduism. They learn that all religions condemn uncontrolled consumption or living at the expense of the poor and the rest of nature.

Consumerism and identity (consumer education, financial capability, PSHE and citizenship)

Uncontrolled or rising consumption is very much the reality for the majority of families and institutions in Britain and children are increasingly the targets of advertisers, retailers, and the entertainment industry. ToysRUs, Girl Heaven, MacDonalds, and Disney's Animal Kingdom rank amongst children's favourite places; the Argos catalogue features in their favourite reading; and characters such as Harry Potter create major merchandising deals for corporations such as Coca-Cola. How should teachers understand such consumerism that generally enlarges ecological footprints and works against sustainable development? How should they address its costs and benefits in the classroom?

Firstly it is important to recognise that consumer capitalism is continually creating new needs and the products and services to meet those needs. It does this through the planned obsolescence of consumer products that are not built to last or be repaired and are continually being superseded by new (more

fashionable) models (eg the refurbishment of banks or garage forecourts, fleet cars, vacuum cleaners). It also works to change our social and physical environment so that we are more dependent on commodities and services that we buy and less dependent on communal, public or self provisioning (eg convenience food or eating out rather than cooking at home, the private car rather than the bus or bicycle, the therapist rather than the talk with family members who are too busy or live miles away). Inflated working hours in increasingly deskilled work are also significant. Workers increasingly leave work mentally and physically exhausted and the market is only too happy to meet their needs for rest, relaxation, recuperation, and labour-saving products. Rather than being the outcome of freely made choices, much personal and domestic consumption is in fact induced by social structures and processes shaped by powerful others.

Against this background it is also necessary for teachers to understand that childhood and youth are periods of self- development and experimentation with identity. Consumer capitalism recognises this and offers the young a vast array of products and brands that enable them to announce who they are, display solidarity with or differentiate themselves from certain others. Children's bodies change rapidly and they become increasingly aware of the importance the adult world and their peers place on bodily appearance and meaning. The body is a potent zone of self-expression and creativity, our prime source of pleasure and pain, and our first point of contact with the environment. ESD should be a form of health education in that it helps children resist the colonisation of their bodies by commercial forces (eg junk food, polluted air, violent computer games) and offers them alternative sources of pleasure, development and identity.

While there is value in encouraging children to consume in more environmentally and socially responsible ways within consumer capitalism (the thrust of much environmental education sponsored by governments and private corporations), ESD should also encourage them to consider more radical alternatives. These include forms of post-industrial socialism that would meet everyone's true needs while restraining economic systems within ecological limits. Democratically accountable governments would require production of only durable necessities using clean, sustainable technologies, and would guarantee everyone a basic income in return for reduced working hours in the formal economy, household or community sector. New technologies and the elimination of 'useless work' to make 'useless products' would free time for people to develop themselves and their community (personal and social capital) and engage in more self and community provisioning. As people gained new satisfactions through rediscovering themselves, the local and global community, and the rest of nature, the alienation that ultimately fuels consumer capitalism would be eroded.

Some teachers and schools will consider such alternatives to consumer capitalism relevant at a time when the Government is encouraging primary schools to provide consumer education and develop financial capability (money management) as part of personal, social and health education. The National Consumer Education Partnership (www.ncep.org.uk) provides a framework for the development of consumer skills and attitudes at all key stages, while the Personal Finance Education Group has a site (www.pfeg.org.uk) linking DfES guidance on financial capability to teaching resources. Right at the end of the KS2 guidance is the suggestion that pupils should *understand that there is an ethical dimension to financial decisions eg Discuss the environmental implications of different products. Is it worth paying more for a product that does less environmental damage?*

Exploring the ethical dimensions of consumerism may involve teachers and pupils discussing advertisements on McDonalds' web-site (http://www.mcdonalds.co.uk/advertising/asp/AD_home.asp). What are these television commercials selling? What is their appeal? What do they tell us (or not tell us) about the fast food we are buying? A visit to McSpotlight (<http://www.mcspotlight.org/>) or a Guardian resource for secondary pupils (<http://www.learn.co.uk/glearning/secondary/topical/ks4/branding/article2.htm>) will help teachers with possible answers to these questions and perhaps make them wonder whether McSpotlight's anti-capitalist position makes it any less suspect than McDonalds as a source of information. Alternatively teachers might ask pupils to look at the photographs of No Shopping Day demonstrations around the world (<http://adbusters.org/campaigns/bnd/toolbox/photos/>). Does such a day have value in reminding us of the 'real costs' of shopping, that there are other ways of spending time and money?

Critical pedagogy (thinking skills across the curriculum)

Organisations like Adbusters that engage in subverting or 'jamming' the dominant culture, remind us that most post-modern citizens are reflexive individuals continually pondering the fallibility of knowledge and the unintended consequences of post-modern social processes. Climate change, foot and mouth disease, cancers related to pesticides, hyperactivity related to food additives, are some of the risks, arising from our relations with the rest of nature, that affect teachers and pupils. Reflection on these suggests far reaching and unpredictable webs of connection; the need for integrated knowledge or holistic expertise to find the true meaning of everyday events; the value of the precautionary principle (if in doubt don't); and the need for forms of participatory knowledge construction and decision making that give citizens (and the rest of sentient nature) a genuine voice in shaping more sustainable forms of development.

All this has implications for teaching and learning in primary schools. Schools need to become reflexive institutions, with thinking curricula and classrooms, fully engaged with the media through which we learn about and assess risk. Children should be taught to:

<i>thinking skills</i>	<p>Search out meaning and thereby impose structure on their lives.</p> <p>Deal with novel problems and situations.</p> <p>Adopt a critical attitude to information and arguments, think flexibly and communicate effectively.</p> <p>Engage multiple intelligences and deal with open-ended tasks that have multiple solutions.</p>
<i>lessons</i>	<p>Should introduce the kind of critical ideas relating to the environment and development already considered.</p> <p>ICT should be used in ways that foster collaborative learning, media literacy, and shared decision making.</p>

Teachers wishing to infuse critical pedagogy and thinking skills into the ESD curriculum can gain insights from research such as that summarised at http://www.dfes.gov.uk/research/re_brief/RB115.doc. Judy Keen's paper at <http://www.tased.edu.au/tasonline/tag/aaegt7/keen.htm> provides an overview of Philosophy for Children and the questioning skills developed by this programme can readily be applied to the kinds of activities already examined in this section. The Media Awareness Network in Canada (www.media.awareness.ca) is developing activities on net literacy for children and teachers wishing to develop their thinking skills might apply them to an evaluation of such resources as the Dustbin Pack for KS2 sponsored by Coca Cola (<http://www.wastewatch.org.uk/>)

Activity 2: the potential of a distant locality study in geography

Leaders of ESD should ensure *curriculum coverage, continuity and progression in the subject for all pupils ... that teachers are clear about the teaching of objectives in lessons ... that teachers of the subject are aware of its contribution to pupils' understanding of the duties, opportunities, responsibilities and rights of citizens ... the effective development of pupils' individual and collective study skills necessary for them to become increasingly independent when out of school* (CPD Framework, teaching and managing pupil learning).

<i>preparation</i>	<p>Download the Curriculum Guidelines for primary schools (separate versions for England, Wales and Scotland) from the WWF website (www.wwflearning.co.uk/resource/) which contain a matrix showing opportunities for ESD in the primary curriculum.</p> <p>Visit the QCA website that supports ESD (www.nc.uk.net/esd) and print off the pages that define ESD, outline its seven key concepts (interdependence, citizenship and stewardship, needs and rights of future generations, diversity, quality of</p>
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life, sustainable change, and uncertainty and precaution) and provide illustration of how they might feature in the curriculum at KS1 and KS2.

Find some stories and teaching packs about distant localities used in the teaching of the geography programmes of study for these key stages - these have become popular since the introduction of the NC and sources include the Geographical Association (<http://www.geography.org.uk/>) and Development Education Centres (www.globaldimension.org.uk).

The activity should be facilitated by the teacher who is the co-ordinator for ESD and should involve all the staff (s/he may also be the leader or co-ordinator for geography). S/he should distribute copies of the relevant WWF primary matrix and QCA web pages dealing with ESD in advance and ask colleagues to read them.

Initial discussion points

Discuss the advantages and disadvantages of the subject based curriculum compared with the integrated curriculum.

Highlight the reasons for promoting ESD throughout the curriculum - list the potential gains.

Refer to the WWF primary matrix and QCA web pages dealing with ESD - discuss: the definition of ESD quoted in both documents, the wide range of opportunities for ESD across subjects, the role of key concepts as the 'glue' binding the subject curriculum together.

Suggest how different subjects might explore and develop one or more of the key concepts for ESD.

Then illustrate the value of key concepts in more detail.

examining the potential for ESD in a distant locality study

Focus on a distant locality that features in the geography curriculum at KS1 or probably at KS2;

describe the locality on which the story or teaching pack is based and outline some of the related resources and activities the school has developed.

Stress the role of inquiry and key questions and concepts in the teaching of geography and ask how the locality study might be revised to ensure children develop 'knowledge and understanding of sustainable development'.

Devise activities that allow pupils to decide whether people are living sustainably in the locality and how they might live more sustainably.

Focus attention on the five dimensions of sustainability (ecological, economic, social, cultural, personal) and other ideas from the first section of this booklet.

Avoid being too challenging but emphasise the

advantages of an approach that is constructively critical.

A locality study should explore the positive and negative aspects of people's ways of life and suggest how changed forms of technology and governance may foster more sustainable forms of development. Mention of governance will draw attention to PSHE and Citizenship and there is scope to consider whether the locality study can also accommodate these in ways that foster ESD.

The focus on the locality study is designed to illustrate how existing lessons and resources can be revised to accommodate and develop ESD. There are clearly other dimensions, such as the need for a thinking curriculum and thinking classrooms, that might be incorporated, but these are perhaps best left for the moment in the hope that having created interest in the potential of ESD, colleagues will ask for more.

The greening of the school and the development of community links

There is little point in reforming the aims of the primary school and its taught curriculum, unless the aims professed and lessons taught are reflected in the day to day life of the school and its relations to the wider community. Education for sustainable development is essentially a process of social learning or action research in which pupils and teachers should reflect and act on alternative technologies and forms of governance along with others. The school should be part of local, national, European and global communities that are learning from each other as they learn their different ways towards sustainability. In all this learning, the quality of children's and adults' participation and their empowerment should be key concerns of those employed as teachers.

Participation and empowerment are important if we are to determine the conditions of our own existence rather than accept those imposed by others. True we have to balance our rights to self determination with recognition of the rights of others (present and future generations and the rest of sentient nature) but too much schooling prepares young people for an 'improved' version of business as usual rather than exploring genuine alternatives. Much school 'greening' can be seen in this light. It is reformist rather than radical. It seeks to improve the environmental performance or management of the school, render it a more 'healthy' institution, and help it learn alongside others learning in communities near and far. It stresses participation and democracy yet sees no contradiction between its aims and the wider undemocratic structures and processes shaping schools and communities.

Greening the school – Eco Schools

Eco Schools (<http://www.eco-schools.org.uk>) involves the whole school (pupils, teachers, non-teaching staff and governors) together with members of the local community (parents, the local authority, the media and local business) creating a shared understanding of what it takes to run a school in a way that respects the environment. It offers schools support to develop an environmental management system through the action research process and to link this with the promotion of environmental awareness across the curriculum. It is also an award scheme that can raise the profile of a school.

Eco schools are expected to tackle seven aspects of environmental management: litter, waste minimisation, energy, water, transport, healthy living, and school grounds (although not all at once!). It is suggested they begin with an environmental review checking the environmental impacts (footprint) of the school and although a checklist is offered it is likely that teachers and pupils will want to adapt this for their own school and priorities. Once an action plan has been drawn up Eco Schools offers advice on finding appropriate technology and support along with pointers to good practice and advice on involving the school with the wider community.

You are most likely to perceive the potential for greening your school by looking at the case studies on the Eco Schools site or on similar sites in other countries (<http://www.ecoschools.com/>). Planted play areas, solar panels, reed beds for waste water treatment, allotments for food growing, recycling areas, bicycle repair sheds are just some of the innovations one might expect to find, but there are real obstacles to their adoption and funding. Head teachers, parents and governors have to be educated as to their value and then convinced that they can be afforded within the school budget or through fund raising. Pupils might ask the following questions:

- If green schools and green living are such good ideas, why isn't the government doing more to enable us to be educated and to live in greener ways?
- Why does it expect schools and individuals to do so much for themselves while it carries on with transport and other policies that make school and household greening more difficult?

A school travel plan

The mayhem outside many primary school gates before and after school has convinced many schools that they need a travel plan that links with ESD. As with the general greening of the school, advice on travel planning suggests this is done through a process of wide consultation. This might involve, in addition to school interests, school crossing patrols, police, road safety organisations, school transport operators, drivers of delivery vehicles, and neighbours of the school. The plan might recommend car sharing by staff, re-routing or re-scheduling of buses, restrictions on parking in neighbouring streets, and the introduction of 'walking buses'. The latter provide a safe and supervised way of enabling children to walk to school and have additional benefits in terms of children's health, awareness of the local environment, and neighbourliness.

The Sustainable School Travel database (www.databases.dtlr.gov.uk/schools/search.asp) gives details of initiatives and related educational publications and the Safer Routes to School Scheme offers a teachers' resource pack (www.saferoutestoschool.org.uk). Travel to school is used as a context for work supporting the National Literacy Strategy for England (www.ex.ac.uk/cee/better) and statistics on personal travel that pupils can use in project work are available in Factsheet 2 at www.transtat.detr.gov.uk/personal/index.htm. Meanwhile new car sales continue at record levels and the 'school run' has become an established part of many parents' routine. Overcoming the obstacles to a school travel plan is likely to involve the education of parents and the rethinking of their priorities.

School grounds, the cultural dimension

The state of many school grounds is a sad indication of our ability to care for one another and the rest of nature. While grounds can provide interest and stimulation, promote learning, and encourage more sustainable relations between people and between people and the rest of nature, many lack this potential and fail to earn pupils' respect, even encouraging misbehaviour. Learning through Landscapes (www.ltl.org.uk/) offers schools a toolkit to improve such situations through the process of grounds improvement. As with Eco Schools and travel planning, this is a co-operative process that seeks to:

- increase resources for teaching the formal curriculum,
- develop an ethos of care, ownership and responsibility amongst pupils and staff,
- improve the image and popularity of the school.

Schools working with Learning through Landscapes have carried out a wide variety of improvements. Particularly significant in the context of sustaining biological and cultural diversity are those schools that have begun to cultivate food and medicinal crops valued by minority communities within their catchments. Parents have displayed pride in their knowledge of plants and their cultivation and pupils have been able to share important elements of their cultures.

Participation - PSHE and Citizenship

The Framework for PSHE and Citizenship at KS 1&2 (www.qca.org.uk/menu.htm) emphasises community involvement alongside the development of moral and social responsibility and some basic aspects of political literacy. It suggests that PSHE and Citizenship should build on what schools may already be doing well and recommends a whole-school approach based on the school self-improvement model that underpins the National Healthy School Standard. This model adopts a similar action research process to Eco-Schools' environmental management system and Learning through Landscape's toolkit, and there are real opportunities for integrating these given clear leadership and support from governors.

The Framework reminds teachers that:

“the personal and social development of children can be enhanced by a school environment that allows them to feel safe and for which they have some responsibility. PSHE and citizenship can provide opportunities for children to become involved in developing proposals for improving the school environment. Social and moral responsibility can be developed through encouraging positive behaviour and relationships, anti-bullying strategies, environmental and recycling projects with local authorities, businesses and the community.”

When children are working on activities or projects to 'green' the school they should be encouraged to develop clearly understood processes, roles and rules that allow them to develop their own orientations to participation in ways that build upon their particular interests and desires. They should experience and discuss different models of decision-making (authoritarian, delegation of responsibility, random choice, direct democracy, representative democracy, consensus) and so gain the language and ideas that will enable them to develop their own democratic processes and rules. There is much sound advice on children's participation in environmental management and planning (for example <http://ceeds.caup.washington.edu/>) and the minimum requirements for a project to be participatory are that:

<i>children</i>	Understand the intentions of the project. Know who has made the decisions concerning their involvement and why. Have a meaningful (rather than a decorative) role. Volunteer for the project after it has been made clear to them.
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It is through participation that children begin to understand democracy and the basic institutions that support it locally, nationally, and internationally. As they experience and learn about power and decision making in the school, local council, local firm, or community group, they begin to develop an understanding of basic political concepts (democracy and autocracy, equality and diversity, individual and community, rights and responsibilities); recognise that economic, political and cultural power operate together in complex ways; and consider whether the school, council, firm or community group displays good governance. Does it function well? Is it accountable to its workers and users? Can they participate in its decisions? Do they regard it as worthy of support?

Involvement with local and more distant communities should develop pupils' political literacy (their ability to 'read and write' their political situation). While political literacy is largely a matter for the secondary school, primary pupils should be able to study issues, such as the future of food and farming or road charging, in ways that help them to understand what the main political disputes are about; what beliefs the main contestants have of them; how they are likely to affect them, and how they can do something about the issue in a manner that is effective and respectful of the sincerity of others and what they believe. A 'knowledge and understanding of sustainable development and environmental issues' is one essential element of what is required of citizenship education by the end of compulsory schooling, and primary teachers should review these elements (key concepts, values and dispositions, skills and aptitudes, knowledge and understanding) and consider how they might best lay the foundations for their later development.

Above all it is perhaps necessary that they begin to cultivate a healthy scepticism towards current forms of liberal democracy and provide some theoretical and practical engagement with alternative models of

democracy that may have more potential to realise our common interest in sustainable development. KS2 pupils might:

- consider why the United Nations is not an effective world government;
- debate the issues surrounding donations to political parties;
- learn about an 'alternative' community that combines direct democracy with experiments in sustainable living.

The Global dimension

An earlier section suggested that we are increasingly members of diverse real and virtual communities that are often truly global in their range or extent. Post-modern primary education should begin to prepare young people for global citizenship. This involves complementing best practice in multicultural education with education about institutions of global governance and how these might be reformed and extended to ensure the sustainable development of all the world's peoples. Recommended guidance on developing a global dimension in the school curriculum suggests how pupils' awareness and understanding of global issues might progress:

At KS1 pupils begin to develop a sense of their own worth and the worth of others. They develop a sense of themselves as part of the wider world and gain awareness of a range of cultures and places. They learn that all humanity shares the same basic needs but that there are differences in how these needs are met.

At key stage 2 pupils develop their understanding beyond their own experience and build up their knowledge of the wider world and of different societies and cultures. They learn about similarities and differences between people and places around the world and about disparities in the world. They develop their sense of social justice

and moral responsibility and begin to understand that their own choices can affect global issues as well as local ones.

(Developing a global dimension in the school curriculum, DFID/DfEE/QCA/DEA & CB, 2000, p. 3)

The guidance suggests that certain key concepts (citizenship, sustainable development, social justice, values and perceptions, diversity, interdependence, conflict resolution, and human rights) should form the core of learning about global issues within this progression, and provides examples of good practice within all subjects at each key stage. Where it is weak is in failing to suggest to teachers how the world works and how the reform of global governance and citizenship might lead to more sustainable futures.

unanswered questions in the guidance document

How does a KS 1 teacher explain why so many people's needs are not met?

What explanations should KS 2 teachers offer about disparities in the world and how should they develop children's sense of social justice and moral responsibility in relation to such corporations as McDonalds or Exxon?

What forms of democracy and global citizenship offer the best prospects for social justice, interdependence conflict resolution, human rights and sustainable development?

These are big questions, addressed by an extensive academic literature, but there is little in the guidance to help teachers find and evaluate diverse answers and so further their professional development. *Developing a global dimension in the school curriculum* does suggest how schools can link with school communities overseas and further guidance on such linking is available from the Central Bureau (www.centralbureau.org.uk). It recommends a database on good quality curriculum materials (www.globaldimension.org.uk) and suggests schools seek support from their nearest development education centre (www.dea.org.uk).

Continuing Professional Development

Teachers seeking CPD in ESD can find details of an internet based course provided by WWF at www.wwflearning.org.uk. South Bank University runs certificate and masters level courses in education for sustainability (www.sbu.ac.uk/fhss/eede) and UNESCO has a web based course, Teaching and Learning for a Sustainable Future, at www.unesco.org/education/tlsf/. Articles on ESD are to be found in a range of journals including *Environmental Education Research* and the *Development Education Journal*. The Development Education Association (www.dea.org.uk) and Council for Environmental Education (www.cee.org.uk) provide links to relevant professional associations and opportunities for professional development.

Activity 3: Becoming part of a local network for sustainable development

Leaders of ESD should “*develop effective links with the local community, including business and industry, in order to extend the subject, enhance teaching and develop the pupils’ wider understanding.*” (CPD Framework, relations with parents & wider community).

preparation

Contact the environment or planning office in the local town, city or county hall.
 Speak to the officer with responsibility for sustainable development.
 Enquire about the current status of Local Agenda 21 and what measures have been or are being taken to encourage schools to participate in the delivery of this plan or other initiatives related to sustainable development.
 Invite the officer to attend school for the activity which requires access to the internet.

The Earth Summit held in 1992 drew up Agenda 21, an action plan to move communities towards sustainable development in the 21st century. Local governments were given a key role in this plan and asked to draw up local plans after consultation with local businesses and community groups. Many councils in the UK published a Local Agenda 21 (LA21) in the late 1990s and in Dorset an Education for Sustainability Network, www.dorset-lea.org.uk/efsn/pages/efsnnet.htm was established to promote the local agenda. This activity might begin by introducing/reminding colleagues to/of LA 21 and giving them the opportunity to review the Dorset website. What have teachers and others in Dorset been doing? What is useful/less useful on the website? What evidence does it provide of successful school/community linking? Are there similar networks?

Teachers next access the homepage for their local town, city, county council and try to find out about LA 21 in their locality: does LA21 exist, what is its status, what has been done in terms of implementing the plan, is there a local network similar to that in Dorset? After 10/15 minutes of browsing it is probably appropriate to introduce the local government officer, ask him/her to provide a short introduction and then answer questions. S/he is likely to suggest that LA21 has lost status/importance in the face of other initiatives introduced by central government but that the Earth Summit in Johannesburg in 2002 may again raise the profile of such local initiatives.

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Use the officer’s expertise and knowledge of the local community to:

Linking with local initiatives

Consider how businesses, local government departments, and community groups can help educate pupils for sustainable development.
 Discuss and list what they hope a local firm, government or community group might provide for pupils.
 Compare and rank their expectations and suggest some possible partners.
 Plan the initial approach to the partner. (How will the school’s needs be outlined and explained? On what basis will the partner be invited to co-operate? What

curriculum topics or aspects of school 'greening' provide a suitable context for co-operation? What objectives will the link be expected to fulfil in terms of ESD?)

Schools often have more developed links with the voluntary sector than with business but there are many websites that outline the potential for school-industry links (eg www.ebplus.org.uk for Cheshire and Warrington). It is important that from an early age children recognise industry's responsibilities to shareholders, workers, consumers and citizens and understand that law, adequately enforced, may be necessary (rather than self regulation) to ensure industry behaves in responsible ways.

And finally . . .

The environment is deteriorating. The pressures of population and unsustainable consumption are increasing. The natural world and biodiversity are suffering. Poverty is endemic. Inequalities between and within countries are growing more acute. Globalisation is opening up the whole world to the free market. But proper guidance or regulation of this market to protect the environment and social goods is lagging behind. 2002 is a prime opportunity for a new generation of active champions to seize hold of the sustainable development agenda and push it forward vigorously.

Derek Osborn, Chair of UNED/UK (www.unedforum.org), 1998

In September 2002 world leaders will meet in Johannesburg and are likely to renew their commitment to sustainable development. There remain however significant gaps between their rhetoric and reality. The UK Government claims to support sustainable development and ESD but its policies in such areas as food and farming, energy, transport and education show continuing contradictions. Educational reforms that seek to improve the competitiveness and productivity of Britains' workforce in an era of globalisation, are widening social inequalities, undermining teacher professionalism, and narrowing the curriculum. Education's role in supporting economic capital is valued more highly than its roles in fostering human, social and ecological capital and the resultant problems prompt contradictory policies that encourage greater attention to citizenship, PSHE, and social inclusion.

This booklet has attempted to show how teachers can use these contradictions to create healthier and more effective schools that offer pupils the prospect of more fulfilling and sustainable futures. It has suggested that ESD needs its champions within schools and they need the knowledge, skills and values to interpret curriculum and other guidance in progressive and empowering ways. The challenge is to recognise the limits of modern primary education in an unsustainable world; to engage the whole school community in debate on alternatives that are emerging in a post-modern world; and to then create a school that begins to prepare young people for more sustainable ways of working and living.

In this transition schools should learn alongside social innovations in the wider community. They should seek to provide all pupils with some experience of the emotional and spiritual rewards of living more sustainably for only then are the attractions of consumer capitalism likely to fade. The new sustainable society is growing within the old and it is never too early for primary schools to begin exploring alternatives and providing children with the resources they need to create more sustainable futures.

Further reading

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