Educating to make sense of global issues

In this chapter, David Hicks looks at education for sustainable development as a Controversial issue, examining its origins and the ideological debates surrounding it. Focusing on climate change, he explores why this is a controversial issue, pointing out that our beliefs about its importance are not just about evidence but also about different world views, including ideological and political differences. There will always be profound differences in the way people view human nature, the appropriate goals of life and the means by which these may be achieved, he argues. In consequence there will always be debate about the meanings of sustainability and the best way to respond to climate change and how education should address the issue.

The UN Decade of Education for Sustainable Development began in 2005, marking international recognition of the need for education to address issues of sustainability (http://portal.unsco.org/education). In the English national curriculum this is taken to be a cross-curricular concern.

Education for sustainable development enables pupils to develop the knowledge, skills, understanding and values to participate in decisions about the way we do things individually and collectively, both locally and globally, that will improve the quality of life now without damaging the planet for the future. There are opportunities for pupils to develop their understanding of sustainable development within the school curriculum, in particular with their work in geography, science, PSHE [personal, social and health education] and citizenship. (DfEE 1999)

More detailed guidance for teachers is given on the QCA (Qualifications and Curriculum Authority) website at www.nc.uk.net/esd/index.htm. The equivalent body in Wales has published guidance entitled *Education for Sustainable Development and Global Citizenship* (ACCAC 2002).

Whilst some educators take education for sustainability to be a fairly recent invention, others point to a longstanding recognition that teachers should help students make sense of global issues. There are three issue-based educations, each with at least a thirty year history, that have provided the building blocks for education for sustainable development (ESD): environmental education, development education, global education (Hicks and Holden 2007). A wealth of resources is available for educators (Huckle and Sterling 1996; Smith and Williams 1999; Stone 2 and Barlow 2005). It is sources such as these that highlight some of the major debates in the field.

Richardson (1986) set out the dilemma when he wrote:
í controversy is not to do with different levels of knowledge and information but with different opinions, values and priorities, and, basically and essentially, with different material interests. A controversial issueí is one on which society is divided.

The difference of opinion may be about the very definition and naming of the problem to be solved; and/or about its causes and history, in society, in human nature; and/or about the actions which should be taken, both in the short term and long, to remove or manage the problem; and/or about the structure and contours of the ideal situationí towards which action is taken, and in the utopian light of which the problem was first perceived and labelled. (Richardson 1986: 27)

The controversies inherent in the notion of education for sustainability thus relate to debates about: i) the meaning of sustainability and ii) the deeper purposes of education.

The notion of sustainability is deeply contested (Fien and Tilbury 2003) and the four perspectives outlined below indicate why this is so.

This worldview sees human beings as more important than nature, and technology as the answer to most problems. Technocentrics do not believe major changes are needed in peopleǿs lifestyles in order to create a more sustainable society, arguing that problems can be resolved by new technology and government legislation. Technocentrics are reformist in their objectives, believing that economic growth should go an as before - but just in a more sustainable way.

Many governments, economists, financiers and business people thus often talk in terms of the need for *sustainable growth*.

This is a nature-centred worldview which believes protection of the biosphere is as important as fulfilment of human needs. Natural systems are seen as offering a holistic model of *sustainable development* in which social, economic and environmental goals are of equal importance.

Technocentrism is seen as one of the major causes of unsustainable development. Ecocentrics are radical in their objectives, believing major changes in western lifestyles are needed to create a more sustainable society ó a view held by most environmentalists, environmental NGOs, younger people and progressive thinkers.

This perspective is held by those who believe environmental issues are *not* a serious cause for concern at all. Contrarians are skeptical about what they consider to be apocalyptic warnings of ecological catastrophe, whether the danger of global warming or the depletion of key mineral resources. This is seen as undue and inappropriate pessimism. Writers like Beckerman (1995) and Lomborg (2001) believe that environmentalists who predict catastrophe do so in order to alarm people and thus increase their revenues and their bureaucracies. Contrarians often work for the fossil fuel industry, big corporations, right-wing think tanks or free-market lobbying groups.

The 1992 Earth Summit highlighted major North-South tensions as rich and poor countries of the world saw the problems of sustainability, and solutions, in quite different terms. Northern governments wanted the poorer South to be responsible stewards of the Earth. Southern governments wanted the North to help eradicate poverty. The South saw neo-colonialism and the strategies of the International

Monetary Fund and World Bank as responsible for unsustainable development. They resented Northern demands that they should not exploit their own natural resources.

So when the term 'sustainability' is used in educational documents it is important to read between the lines in order to assess what definition of sustainability is being offered. It is a contested, and thus controversial, concept.

Ideology is defined as a broad interlocked set of ideas and beliefs about the world held by a group of people that they demonstrate in both behaviour and conversation to various audiences. These systems of belief are usually seen as 'the way things really are' by the groups holding them, and they become the taken-for-granted way of making sense of the world. (Meighan and Siraj-Blatchford, 2003: 186)

One cannot understand the notion of controversy in education without some understanding of political ideology. Goodwin (1997) and Heywood (2005) identify a number of major ideologies in society such as liberalism, conservatism, socialism, feminism and green. Given their taken-forgranted nature it follows that clashes of ideology, political and educational, underlie much of the discussion about the nature of controversial issues. In particular, as Apple (2001) argues, it is neoliberal and neoconservative ideas which deeply influence education today.

The rights of the individual and the attainment of human happiness are the main goals of liberalism. The most important belief for neoliberals is 'economic rationality', i.e. everyone should act to maximize their own personal benefits. Private businesses competing against each other will provide the greatest good for all. Such ideas are part of dominant ideology in the western world. In this worldview money spent on education is seen as a waste unless it helps the country compete effectively in the global market place. Market place metaphors are applied to education: parents as consumers, education as business, internal/external competition to bring out the best in pupils and school. Schools must be modeled on the business world and thus take a more technocratic, managerial and performance driven view of teaching and learning, including sustainability.

Conservatives tend to be pessimistic about human nature whilst stressing the importance of tradition, private property and patriotism. Neoconservatives believe in deregulation of the market in order to encourage competition. 'Free market' economics is seen as the best foundation for a vibrant economy. Neo-conservatives in the UK launched a major attack against the teaching profession in the 1980s and introduced a mandatory national curriculum in order to gain greater control over education. They wanted a return to 'traditional' values, a curriculum untainted by discussion of global issues - such as sustainability - and a stress on higher educational standards. The way to achieve this was felt to be SATs and school league tables. This was based on the belief that competition brings out the best in people and will therefore do the same for both pupils and schools.

Those who take a radical perspective will question the status quo in society and the dominant ideologies that support it. They oppose neoconservative and neoliberal values and see their stress on economic rationality and free market capitalism as one of the main causes of global inequality and debt. The anti-globalisation movement

marks a major convergence of radical opposition and brings together a wide range of issues: environment, human rights, debt, poverty, capitalism and transnational corporations (Klein 2001). Richardson (1990:7) highlights the importance of a radical stance in education when he writes about two long-standing educational traditions, one focusing on the 'person', the other on the 'political'.

Both... are concerned with wholeness and holistic thinking, but neither, arguably, is complete without the other. There cannot be wholeness in individuals independently of strenuous attempts to heal rifts and contradictions in wider society and in the education system. Conversely, political struggle to create wholeness in society - that is, equality and justice in dealings and relationships between social classes, between countries, between ethnic groups, between women and men - is doomed to no more than partial success... if it is not accompanied by... the search for wholeness and integration in individuals.

This view of education stands in contrast to the dominant ideologies sketched out above.

Neoliberal and neoconservative forms of education will tend to focus on the importance of sustainable growth, whilst more progressive and radical forms of education will focus on holistic models of sustainable development.

Over the last twenty years climate change has become recognized as one of the major issues affecting the future (Lynas 2004; IPCC 2007 (www.ipcc.ch); Flannery 2006). Unless greenhouse gases like CO_2 occurred naturally there would be no life on Earth since they help trap the heat from the sun. However, human activity has lead to more than 30 per cent increase in CO_2 since 1800. This is a result of burning fossil fuels (coal, oil, gas) to create electricity and also using them as a fuel in road, sea and air transport. The consequences are already evident in melting glaciers and ice caps, changes in the seasons, a greater chance of flooding and more extreme weather conditions. As with all issues relating to sustainability, climate change is seen by some as controversial.

One of the issues at the heart of the climate change debate is the fact that different 'authorities' make opposing claims about its seriousness. Is this then a question of evidence or of ideology or both? Two different perspectives are considered here: i) the international consensus, as represented by the assessment reports of the Intergovernmental Panel on Climate Change (2007); ii) the contrarians, who take a much more skeptical position.

Whilst over geological time the average global temperature has ranged from 2C-27C, the average over the last 10,000 years has been 14C. During the course of human history this has only fluctuated by about 1.0C (Flannery 2006). As a result of increasing CO_2 in the atmosphere, the latest increasingly sophisticated climate change simulations estimate that average global temperatures may rise by anything from 1.4 to 11.0C. It has also been calculated that in order to stabilize the Earth's climate, greenhouse gases may need to be cut by as much as 70 per cent.

Significant changes in climate have already become apparent over the last twenty years (IPCC 2007) and the Kyoto Protocol was a vital attempt to reach international agreement over the need to cut carbon emissions. By 2005 enough countries had

signed up to this agreement for it to come into force, although not without major debates and disagreements. The two major countries who have refused to sign are the USA and Australia. The USA emits more greenhouse gases per head than any other country, 36 per cent of the world's total.

Australia and the USA refuse to ratify the Kyoto agreement because they fear that the cost of doing so would drastically slow down their rate of economic growth. The seriousness of climate change is challenged by both the White House and major sectors of American industry, in particular the powerful fossil fuel lobby, i.e. the big coal, oil and gas companies. It is argued that climate change, if it is happening at all, is simply a technological problem and certainly not one that requires a fundamental change in western lifestyles. There is thus a constant questioning of the science behind climate change by powerful lobbying organizations such as the Competitive Enterprise Institute, the American Petroleum Institute, the Heritage Foundation and the Scientific Alliance.

Brown (2005) reports on an investigation into the work of three of the US's most senior climate specialists, which alleged that there were errors in their calculations and demanded details of their funding and of all their publications. Borger and others report incidents of tampering with US climate change research. 'Documents released by a watchdog group' show that as chief of staff for the White House council on environmental quality, Philip Cooney watered down government scientific papers on climate change and played up uncertainties in the scientific literature. Mr. Cooney is a law graduate and has no scientific training' (Borger 2005:7). The President of the Royal Society, Robert May, has warned that the UK is likely to be the next ideological battleground for the skeptics (Walsh 2005). Efforts to establish a European coalition to challenge European Union climate policy are already under way (Adam 2005).

How should one view this controversy? Is it about the nature of the scientific evidence? Is it about two opposing views, both of which deserve equal air time? Is it about which party can put forward the best argument? I fear that many controversial issues may be dealt with in the way of the Literary and Debating Society. The notion here is that two opposing views should be given and debated and that the winner is the person who presents the best argument. I believe this Enlightenment view of rational debate to be fundamentally flawed and in this case inappropriate.

This deep disagreement about climate change is not just about 'evidence'. It is about different worldviews, i.e. it is about ideological differences.

The consensus view, as reported by the Intergovernmental Panel on Climate Change, comes from the work of innumerable scientists round the world. Whilst skeptics challenge such findings, apparently on scientific grounds, they actually oppose them on ideological grounds – both technocentric and contrarian. This opposition is based on a belief in the primacy of economic growth and the freedom of the individual and business to achieve their own profit-orientated goals. The skeptics are part of a wider grouping of contrarians who oppose all environmental legislation and the environmental movement itself (Rowell 1996). To know where one stands on this controversy one needs to understand these deeper underlying ideological differences.

In considering the question ±Who to believe?ø in the classroom the following pointers may be useful.

- Whilst this may appear to be about a question of evidence, it is also one of ideology
- Initially students could look at short extracts on climate change from the media, scientific reports and lobbying groups
- Question: In what ways are these extracts different from each other? What sort of
- evidence does each offer about climate change?
- Students are given the source of each extract and asked to consider in what way the
- source might influence the way in which climate change is described
- The two main ideological interests that could be considered are i) the mediaøs need for a dramatic story and ii) the skepticøs rejection of the problem on technocentric or freemarket grounds
- It is important to note that the scientific consensus on climate change is much more
- powerful than the contrarian lobby. They do not represent two equal sides of an
- argument.

So how should one approach climate change in the classroom or with student teachers? Whilst there is growing agreement that this issue should be taught about, whether in citizenship, science or geography, much less has been written about a pedagogical controversy that lies at the heart of such issues.

How do educators approach the matter of teaching about global issues? The initial response is often a desire to alert learners to the nature and importance of the problem, whether to do with environment, development, rights or conflict. Geographers, global educators and others have an excellent and long-standing record in relation to this.

Two recent examples of materials on climate change are *Climate Chaos: Information for Teachers* (WWF 2005) and *Climate Change~ Local & Global: An Enquiry Approach* (TIDE 2005). The latter uses an excellent learner-centred approach for investigating global issues. Both are valuable and stimulating resources that I recommend. As I look at them I remember myself as a young teacher in the 1970s, when environmental issues were first appearing in the headlines. I was enthusiastic about introducing students, and later student teachers, to such issues. We looked at the problems and then the solutions and possible action for change.

What I gradually realized was that having explored the problem in depth, my students, both children and adults, often felt so overwhelmed that they were incapable of any action. Perhaps, I wondered, one should teach about the solutions first. Why is wind power one of the fastest growing sources of renewable energy? Why are more and more people buying green electricity?

If I got students interested first in such action for change, perhaps they would not feel so overwhelmed by the problem. Most global education materials seem to presume

that appropriate enquiry followed by action for change will naturally lead to students feeling more empowered, but this is not necessarily the case.

What is often missing is the affective dimension. Whilst this is true for much of the curriculum, it matters most when we want students to explore major issues which actually threaten the human condition. Various writers (inter alia Beck 1998) have drawn attention to the uncertainties we face in a ‘risk society’ and the fears that arise in relation to this. Postel (1992) and others have noted how the overwhelming nature of many global issues drives people into a state of psychic numbing and denial. Eckersley (1999) has observed that the older students are, the more pessimistic they become about the future. To ignore the affective response to climate change is to foreclose on one of the most crucial elements in learning.

One of the best studies on this was carried out by Rogers (1998), who mapped five broad dimensions of learning that she observed in a course on global futures. These were:

 i) *cognitive dimension:* learning new facts and concepts about global issues;

ii) *affective dimension:* all sorts of feelings came up as a result of this - from hopelessness and depression to a sense of challenge;

iii) *existential dimension:* for some this led to deep soul-searching about the meaning of life;

iv) *empowerment dimension:* if this could be resolved it led to a sense of personal responsibility and commitment;

v) *action dimension:* informed personal, social and political action then followed.

My own research (Hicks 2006) on this with undergraduates showed a similar pattern. What ameliorated the initial sense of despair they felt when facing the state of the world was the opportunity to keep a journal recording their responses to the course and to meet as a group and discuss what they were feeling about the course.

The controversy I am highlighting here is, I think, largely unacknowledged. Indeed, many educators would probably argue that a good enquiry based approach to global learning should satisfy all pedagogical demands. To a degree this is true, but it ignores the affect. Cognitive and affective are two sides of the same coin, as work in the field of emotional literacy (Antidote 2003) fully recognizes. The affect is not a missing dimension in education if we are referring to areas such as personal, social and health education (PSHE). I believe it *is* largely missing, however, in relation to the exploration of global issues such as climate change. This is not helped by the way in which the media reports on global warming. Recent headlines such as ‘Alarm over dramatic weakening of Gulf Stream’, ‘Global warming: the ‘tipping point’’ and ‘On the edge: Greenland ice cap breaking up at twice the rate it was five years ago’, are disturbing at the very least. If they worry me then what are students feeling? Outside of formal education these issues have been addressed in a more holistic and empowering fashion (Macy and Brown 1998). What young people need to know is that adults are doing something about climate change and that there are things they

can do too. They also need the opportunity to share their concerns with adults. As Freire (1994: 9) writes: 'One of the tasks of the progressive educator' is to unveil opportunities for hope, no matter what the obstacles might be'. In considering the question 'How to teach?' in the classroom, the following pointers may be useful.

- Begin by asking what it is students feel they know about climate change. This could be done in small groups, with a composite class list then being drawn up. This also enables the teacher to see what incomplete or erroneous information students have
- Follow this by asking students to share in small groups their personal hopes and fears about climate change
- The issue here is not whether they are 'unreasonable' hopes and fears in adult terms but rather the need to be present to and respect whatever students come up with. The essential task here is for students to feel that their concerns have been heard
- It is useful to list fears first and then hopes. It is best to discuss these separately. The teacher's task at this stage is not to try and allay fears but to demonstrate active listening
- If the programme of work that follows bears in mind these hopes and fears, they can be addressed within the on-going context of enquiry
- It is also important to note that statements about the impact of climate change vary according to the time-scale being used. This is not always stated. What might happen in a hundred or 500 years may be dramatic but also beyond the student's own time-frame
- Smaller changes over a few years or decades are less alarming but equally important to consider and equally demanding local action.

Citizenship in particular invites young people to develop their skills of participation and responsible action. At secondary level (DfEE 1999), 'Pupils should be taught to:

a) use their imagination to consider other people's experiences and be able to think about, express and explain views that are not their own;

b) negotiate, decide and take part responsibly in both school and community based activities;

c) reflect on the process of participating.' What might this look like in relation to climate change? It could be participating in a whole-school project to limit the school's carbon footprint or perhaps taking part in a local or national demonstration against the nuclear industry.
_____ _____
An LEA Inspector told me a few years ago that many of the secondary schools he knew hoped to fulfil the action element of citizenship through work placements, picking up litter and visiting the elderly. This would be a good example of 'modest' action in that it wouldn't require too much effort and, in this case, the school wouldn't have to do anything very differently. This is not to deny that the three examples of action are not each very important in their own right. What then might students be invited to do in relation to climate change? Here are five examples.

- Explain climate change to friends and parents
- Switch off lights voluntarily or when asked
- Make sure that various items are recycled
- Sometimes choose green products when shopping
- Protect trees and green spaces

These actions are all significant because they show an awareness of things that can be done in daily life which will help to reduce carbon emissions. They are all actions which could also be implemented as part of school policy. They are reformist in that they see the problem of climate change as resolvable through a number of small but important changes to the system.

_____

More radical action is likely to involve more effort because it will be directed towards changing the system itself. It will require more sustained commitment over a longer period. Here are five examples.

- Go on climate change demonstrations locally or nationally
- Decide to buy electricity from a totally green source
- Challenge unthinking consumerism and materialism
- Shop locally for local produce, e.g. fair-trade/Farmersø Markets
- Plant trees locally and backing such schemes elsewhere
- Use cycle, bus and train rather than car of plane when possible

These are also actions that a family or a school can take to help reduce carbon emissions but they will all have a deeper effect than the reformist examples above.

Being prepared to go on a local or national demonstration relating to climate change is an act of solidarity with others and a powerful reminder that more can be achieved by working together than alone (www.stopclimatechaos.org). Changing to a green electricity supplier such as Good Energy (www.good-energy.co.uk) will eliminate all carbon emissions from use of electricity at home or at school. Learning to use less of everything, which does not mean sitting in the cold and dark, directly confronts the wasteful materialism and consumerism of western society (www.enough.org.uk). Shopping locally for local products reduces the air miles that many food items travel to reach the supermarket shelves as well as supporting the local economy (www.farmersmarkets.net). Being involved in the work of a Woodland Trust is about taking direct responsibility for the environment in oneøs own locality and its ability to act as a carbon sink (www.woodland-trust.org.uk). Looking at ways of getting to school without using the car may require a change in lifestyle but it is a healthy one (www.sustrans.org.uk).

What then should be the parameters of action for students in school? During the Gulf War some pupils were reprimanded by their schools for going on anti-war demos in school time (*Times Educational Supplement* 2003). Should they not have received recognition for their commitment to free speech and democracy? Were they not developing the very skills that citizenship is designed to promote? It is at this point that the word ÷politicalø generally enters the discussion, suggesting that some actions are political whilst others are not. When a headteacher said to me ÷Iød be happy have a

speaker from Friends of the Earth at a school assembly, but not Greenpeace, I think this was what he meant. However, this distinction is based on a very narrow meaning of the word politics, namely political parties.

Politics, more broadly, is about issues of power in society, how such power is used and to what ends. Sociologists will therefore talk about the politics of the family, the politics of the workplace and the politics of gender. In this context the whole of education and all of life are inextricably bound up with the politics of everyday life. Some schools will therefore wish to say on the safe side of any debates about responsible action in the local and global community. Other schools may have a broader vision of such action and ways to promote it. As teachers have repeatedly told me, school councils can be the place where pupils learn about participative democracy or about authoritarian control.

In this chapter I have tried to highlight some of the debates that occur - or are waiting to occur- in relation to teaching about global issues. I have done this in relation to the field of education for sustainable development and, more particularly, in relation to issues of climate change. I have indicated, as Richardson (1986) argues, that the very question of whether something is controversial is controversial in itself. My first year students sometimes think that educators should just agree on ÷whatøs bestø and then get on with it. A deeper understanding of ideology and educational ideologies shows that there will always be profound differences in the way people view human nature, the appropriate goals of life and the means by which these may be achieved. There will thus always be argument about the purposes of education, the meanings of sustainability and the best way to respond to climate change. Whilst I have simplified the worldviews which underlie these debates, this is not to ignore their complexity and power. Indeed it is educational, political and philosophical ideologies which frame our very sense of what is the norm and what is real. Whether something is controversial or not is at heart not a question of opinion or evidence but rather of oneøs explicit, or more often implicit, ideological beliefs.

"ACCAC (2002) *Education for Sustainable Development and Global Citizenship*. Cardiff: Qualifications, Curriculum and Assessment Authority for Wales
Adam, D. (2005) Oil industry targets EU climate policy, *Guardian*, December 8
Antidote (2003) *The Emotional Literacy Handbook*. London: David Fulton
Apple, M. (2001) *Education the 'Right' Way: Markets, Standards, God and Inequality*. London:
RoutledgeFalmer
Beck, U. (1998) Politics of risk society, in J. Franklin (ed) *The Politics of Risk Society*. London:
Routledge
Beckerman, W. (1995) *Small is Stupid: Blowing the Whistle on the Greens*. London: Duckworth
Borger, J. (2005) Ex-oil lobbyist watered down US climate research, *Guardian*, June
Brown, P. (2005) Republicans accused of witch-hunt against climate change scientists, *Guardian*, August 30 DfEE (1999) *The National Curriculum*. London: Department for Education and Employment
Eckersley, R. (1999) Dreams and expectations: young peopleøs expected and preferred futures and their significance for education, *Futures*, 31, pp73-90
Farmers Markets ~ www.farmersmarkets.net

Fien, J. and Tilbury, D. (2003) The global challenge of sustainability, chapter 1 in D. Tilbury *et al*. (eds) *Education and Sustainability: Responding to the Global Challenge*. Bern: IUCN (World Conservation Union)

Flannery, T. (2006) *The Weather Makers: The History and Future Impact of Climate Change*. London: Allen Lane

Freire, P. (1994) *Pedagogy of Hope*. London: Continuum Good Energy ~ www.good-energy.co.uk

Goodwin, B. (1997) *Using Political Ideas*. Chichester: John Wiley

Heywood, A. (2005) *Political Ideologies*. Basingstoke: Palgrave Macmillan

Hicks, D. (2006) *Lessons for the Future: The Missing Dimension in Education*. Victoria BC: Trafford Publishing

Hicks, D. and Holden, C. (eds) (2007) *The Challenge of Global Education: Key Principles and Effective Practice*. London: RoutledgeFalmer

Huckle, J. and Sterling, S. (eds) (1996) *Education for Sustainability*. London: Earthscan Intergovernmental Panel for Climate Change, Fourth Assessment Report (2007) ~ www.ipcc.ch

Klein, N. (2001) *No Logo*. London: Flamingo

Lomborg, B. (2001) *The Skeptical Environmentalist*. Cambridge: Cambridge University Press

Lynas, M. (2004) *High Tide: How Climate Crisis is Engulfing Our Planet*. London: Harper Perennial

Macy, J. and Brown, M. (1998) *Coming Back to Life: Practices to Reconnect Our Lives, Our World*. Gabriola Island BC: New Society Publishers

Meighan, R. and Siraj-Blatchford, I. (2003) *A Sociology of Educating*. London: Continuum

Never Enough? Anti-consumerist Campaign ~ www.enough.org.uk

Postel, S. (1992) Denial in the decisive decade, chap. 1 in L. Brown and L. Starke (eds) *State of the World 1992*, London: Earthscan

Qualifications and Curriculum Authority ~ www.nc.uk.net/esd/index.htm

Richardson, R. (1986) The hidden messages of school books, *Journal of Moral Education*, 15 (1), pp26-42

Richardson, R. (1990) *Daring to be a Teacher*. Stoke-on-Trent: Trentham Books

Rogers, M. (1998) Student responses to learning about futures, chap. 15 in D. Hicks and R. Slaughter (eds) (1998)*Futures Education: World Yearbook of Education*. London: Kogan Page

Rowell, A. (1996) *Green Backlash: Global Subversion of the Environmental Movement*, London: Routledge

Smith, G. and Williams, D. (eds) (1999) *Ecological Education in Action*. Albany: State University of New York Press

Stone, M. and Barlow, Z. (eds) (2005) *Ecological Literacy: Educating Our Children for a Sustainable World*. San Francisco: Sierra Club Books

Stop Climate Chaos ~ www.stopclimatechaos.org

Sustrans ~ www.sustrans.org.uk

TES (2003) Rebels without a clue? *Times Educational Supplement*, March 28

TIDE (2005) *Climate Change ~ Local & Global: An Enquiry Approach*. Birmingham: Teachers in Development Education

UN Decade of Education for Sustainable Development ~http://portal.unesco.org/education

Walsh, C. (2005) =Denial lobbyø turns up the heat, *Observer*, March 6

Woodland Trust ~ www.woodland-trust.org.uk

WWF-UK (2005) *Climate Chaos: Information for Teachers.* Godalming: World Wild Life Fund for Education