WALKING LIGHTLY ON EARTH

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David revisits the idea of 'Limits to growth' and suggests some activities for visualising a more sustainable future with pupils.

Various thoughts went through my mind as I pondered the notion of 'geography without limits'. It felt tasty, exciting, a new frontier to explore. One of my concerns has always been whether geography helps to prepare pupils for a future that will be very different from today. As a young teacher, I watched a *Horizon* programme on the environment called 'Due to lack of interest tomorrow has been cancelled' (BBC, 1971). This was certainly not what I wanted for my pupils, and from this came an interest in how global trends can affect young people's futures, for better or worse. As a geographer, I felt a particular responsibility for helping pupils think more critically and creatively about the future.

Back then I also came across a landmark book, *The Limits to Growth* (Meadows *et al*., 1972), the first ever computer simulation to map global trends and their possible impact on the twenty-first century. The authors were attacked for their findings, much as climate scientists have been by ill-informed sceptics and climate change deniers. Later studies only further confirmed that on a finite planet there are limits to how much damage the biosphere – our life-support system – can take (Turner and Alexander, 2014). If the ability of Earth's biosphere to replenish itself and process our wastes is exceeded, then we are in trouble. To live sustainably is to minimise our impact on the natural world and others, to keep within the limits. To live unsustainably is to go beyond the limits, damaging the lives of others and the natural world. As ecologists remind us: everything is connected to everything else.

Stephen Scoffham observes that: 'Helping children to develop qualities such as hope, co-operation, trust, fairness and love in relation to their surroundings is essential if they are to engage in a principled manner with the world around them and care about its future. There is now ample evidence that issues to do with sustainability in its widest sense will provide the meta-narrative for the twenty-first century. It is argued that building children's social, emotional and intellectual capacity alongside these positive qualities can promote the capabilities they will need for sustainable living' (Scoffham, 2010).

Part of that meta-narrative is reframing the stories we tell pupils about how the world works, in particular the responsibility of care we have for our life-support system, the biosphere (Hicks, 2016a). So what might this include in the classroom?

Rethink and refuse

Earth Overshoot Day (see web panel) illustrates the consequences for the biosphere of our consumption (resources used/waste produced). If our global ecological footprint matches what the biosphere can process, the books should balance on 31 December of each year. If we are in 'overshoot', that date comes sooner. In 1970 Earth Overshoot Day occurred on 23 December. In 2011 it was 21 September and, in 2015 it was 13 August. A sustainable future requires that we live more simply and waste less energy, that we have enough to meet our needs but not our greed.

Figure 1: By engaging with their surroundings in a principled manner children will care about its future. Photo © David Hicks.

A good place to start is with the vital low-carbon mantra - reduce, reuse, recycle – which should be embedded in all aspects of school life. In particular, it requires careful explanation and elaboration, but as it stands two vital elements are missing. The full version is: rethink, refuse, reduce, reuse, recycle. The current free-market form of economics particularly stresses the need for constantly growing economies and the relentless exploitation of resources and people. Our overconsumption and unequal sharing of the planet's resources are unsustainable and need urgent recognition. They threaten all our futures, not least for those we teach.

Here are some of the thoughts and questions we should be encouraging pupils to formulate. They can be applied to topics such as energy, food, buildings, transport, waste and water specifically, and, indeed, to school life generally.

Rethinking: involves asking questions such as 'Is this really necessary?', 'In what ways might this be unsustainable?' and 'How could this be done more sustainably?'

Refusing: arises out of this process. 'We don't really need to do that.' 'There are better alternatives.' 'It's time to say no to that.'

Reducing: means limiting what we consume, whether electricity, waste, water or paper. 'Do we need as much as that?', 'Isn't that enough?' and 'Less is often best'.

Reusing: once broken or worn items were repaired to extend their life. 'How could this be reused?', 'What needs mending here?' and 'Who would know how to repair this?'

Recycling: has been taken up on a large scale and embodied in council policy. 'What is the school's recycling policy?' 'What happens at home and in the community?'

School should be the place where pupils learn the importance of each of these five steps as well as ways to put them into practice. They should be central to the running of any good school. Annie Leonard's *The Story of Stuff* (2010) explores all of this in more detail. On what day of the year, I wonder, might Earth Overshoot Day occur when your pupils are grown-up? and what would be the consequences of this?

Ecological footprints

As noted above, one way of making our impact on the biosphere clearer is the notion of ecological footprint. Materials from WWF Scotland (see web panel) explore this in some detail and one activity, slightly abbreviated below, is a good example of how one might begin to introduce this theme.

First, ask the learners to imagine that one day they come out of school to find a glass dome has come down on top of their school covering an area of 10 hectares around it. The dome extends down into the soil, so that only light and heat can enter or escape. No air, water, food or other resources can get in; and no sewage, rubbish or other waste can get out. How long do the pupils think they would survive? Why? Build on their responses to reinforce that we take it for granted that our local environment can interact with the rest of the world, for example, we can transport our rubbish somewhere else to dump it, we can bring in food and building materials, our air and water will be replenished by clouds, rain and wind. In other words, we are completely reliant on faraway sources for even our most basic needs.

Second, give everyone a piece of sugar paper and a pen. Ask them to draw carefully round their feet, then cut out the footprint outlines. Ask for examples of how their lifestyles impact on the natural environment – living processes, resources to make energy, disposal of waste, use of land, water and other natural resources to make other things and for enjoyment. Ask learners to take one of their footprints and record, using summary words, all the things that we get from the natural world to support our lifestyles – plants, water, animals, clean air, rocks and minerals, waste disposal, inspiration, peace and quiet.

Now ask for examples of how their lifestyles impact on the natural environment. On the other footprint, they should record all the ways their lifestyle impacts on the natural world. Explain in essence that what we get/what impact we have is how we measure the size of our Ecological Footprint: it's a tool to help us measure and understand the connection between how much of nature we use and how much nature there is. If we understand the connections, we can then reduce our use and impacts. Make a display of the 'footprints'.

WWF Scotland's resources cover the many aspects of a school's ecological footprint and how this can be explored in different ways and different areas of the curriculum. Note: There is a difference between a school's ecological footprint (its total impact on the environment) and its carbon footprint (its particular contribution to global warming).

Limits to growth

Jurgen Randers (2012), one of the contributors to the original *Limits to Growth* report (see web panel), makes it clear that the years ahead are likely to be difficult and testing if we continue on an unsustainable trajectory. This uncomfortable probable future is one that urgently needs our consideration.

Equally, we need to be conversant with the key elements of a more sustainable preferable future. Our responsibility as geographers, not least because of climate change, is to understand both why we are currently heading into an unsustainable future, and the action required to help create a preferred sustainable future (Hicks, 2016b). In these troubled times, we need to be clear as educators what we need to say 'no' to and equally what we need to say 'yes' to. A geography without limits would surely want to look critically and creatively ahead in order to prepare pupils for the transition from a high- to a low-carbon future. If not, what is geography for?

References

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WEB RESOURCES

Earth Overshoot Day: *www.overshootday.org*

WWF Scotland: *www.wwf.org.uk/scotland*

Limits to Growth (download of the original book): *www.clubofrome.org/report/the-limits-to-growth/*

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