



Raging planet

Syd Smith, Sarah Brikké and Phil Smith on the role of education in tackling climate change.

The problem is dire. The situation is urgent. The science tells us climate change is real and human actions are the prime cause. Education can play a major role in treating the international issue of global warming and climate change, an issue that needs more attention than systems currently give it.

In spite of this, many schools have still taken the initiative to treat it seriously.

Climate change is revealing our interdependence on healthy ecosystems, other nations and other species. We need to face this issue together. We are the environment, as David Suzuki says. It is not separate to us. Education must teach these critical relational lessons.

There are those who deny climate change. Fred Bell's paper, 'The Scientific Basis for Scepticism about Global Warming', summarises the differences between fact and fiction; he notes the following facts are accepted by over 90 per cent of the world's scientists. Teachers may use these facts as an initial discussion starter and stimulus for a research assignment.

- CO₂ is a greenhouse gas
- CO₂ in the atmosphere is increasing
- Since we began burning fossil fuels new CO₂ has risen noticeably
- The earth's temperature is rising
- The increase in temperature correlates with the increase in CO₂
- Although today's temperatures may still be within the variations expected from natural causes, today's CO₂ concentration, at 385 ppm, is much greater than expected from natural causes. There is good evidence that during the past 800,000 years, the average concentration has been about 240 ppm and the highest only about 300 ppm. Most experts agree human actions contribute significantly to this.

What role for education and educators?

Education and educators alone cannot change the world overnight, but it is well understood that education can increase knowledge, awareness and understanding, teach and improve skills and enable empowerment, and enable exploration of attitudes, assumptions and beliefs.

Educators can also help learners make conceptual and practical connections, strengthen critical thinking skills, encourage curiosity, exploration, experimentation and connectedness that will lead to an appreciation of beauty and the adoption of caring behaviours, and clarify choices and decisions to retain or change behaviours.

Climate problems are complex and integrated; so too is human behaviour. If we are to stem the flow of greenhouse gases, education needs to be effective in each of these ways above. And education needs to be a part of a mix of tools that include policy,

legislation, economic incentives and disincentives, regulation, monitoring and infrastructure.

Integrated problems require integrated solutions: our approach to prevent, reduce and cope with climate change needs to use diverse and integrated strategies.

Students need help in building healthy relationships with the rest of the natural world, and our planet has a deep need to be cared for. We each must adopt more sustainable and caring behaviours and lifestyles. An ethic of care supports collective obligations of humans towards one another and future generations, in addition to maintaining or preserving the integrity of nature. Bertrand Russell put it this way: "One must care about a world one will not see".

From a very young age, children can experience how to love, care for and respect their environment in order to make a positive change. Through hands-on, sustainability education and leadership programs, children can gain the skills, knowledge and passion to drive environmentally sustainable practices. Children can be agents of change, ambassadors for the environment in their own communities. Schools can learn this ethic of care through explicit teaching as well as from modeling.

Educators also need to facilitate critical thinking and critical assessment of information to ensure students examine content, purpose, sources and alternative arguments and positions. Some principles that environmental educators could observe are:

- Don't avoid or ignore controversial issues put forward by climate sceptics and deniers
- Treat climate change as a topic linked to social, environmental, political, personal and economic issues
- Nurture biophilia – love of the natural world – by getting them into it and having fun. Negativity and stories of powerlessness induce biophobia – fear of the natural world
- Keep it as simple as possible without compromising accuracy
- Examine how climate change is affecting people's lifestyles
- Ask what may happen if we do nothing
- Listen to concerns. Understand that many people are afraid; fear paralyses and stymies purposeful action. Education can build self-efficacy – the sense that something can be done to address the problem, the belief that individuals can do something, and the recognition that those actions make a difference
- Keep in mind that the group most interested are younger people because they are most likely to see the ramifications of climate change for the future. The National Action Plan released by the Australian Department of Environment, Water Heritage and the Arts in 2008 declared that

education systems should be reoriented to sustainability. The year 2010 has been declared the Year of Education for Sustainability in schools. These give imprimatur for educational institutions and educators to get on and inspire, catalyse and model critical thinking, creative questioning and the re-orientation to sustainability.

Many progressive educational institutions are already active in these areas. Over 2000 schools are a part of AuSSI (Australian Sustainable Schools Initiative), each developing school environmental management plans. Some are working on sustainability community programs and communicating with schools overseas (for example, Global Community for Sustainability Project with links to schools in India); others are developing climate change curriculum initiatives in regions throughout NSW (for example, Learnscapes).

Change is happening. We need to be able to learn along the way and have what Homer-Dixon calls a prospective mind – one that engages with complexity, uncertainty and risk, one that applies creative thinking and imagination to the flux of change. Adaptive learners are nimble, smart, alert, prepared, creative and flexible. Education has a clear role here.

Where dialogue has been central to moral and intellectual development, it must now be a critical feature of sustainability. We need to have conversations that help find answers and build relationships and resilience. Here, education can take a lead role.

Examining climate change is an essential educational experience that can serve as a valuable curriculum strategy for all Australian schools. Systems, institutions and educators can play a significant part in helping students empower themselves in head, hearts and hands to make choices in a climate-changed environment. The prime lesson for all of us needs to be: I care, I can, I have to.

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Useful websites

- The AuSSI website: environment.gov.au/education/sustainable-schools
- Eco-footprints: powerhousemuseum.com/education/ecologic/bigfoot/bigfoot2007
- Eco-handprints: restore-earth.org
- 2010: Year of Environmental Sustainability (Year of Learning for Sustainability): data.qld.gov.au/yes
- Millennium Kids – Young people encouraging others to be active and aware in the environment: millenniumkids.com.au