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WHAT IS SUSTAINABILITY, WHY IS IT IMPORTANT AND WHAT DOES IT MEAN FOR MY TEACHING?

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KEY WORDS

- Active learning
- Climate change
- Enquiry
- Experience
- Hope
- Outdoor learning
- Sustainable development goals
- Sustainability
- Sustainability pedagogy

In this chapter, we introduce key aspects of the contemporary global crisis and the urgent need to move towards more sustainable ways of living. The vital role of education and its potential to contribute to change is explored. We then consider what this means for those working in primary school contexts in terms of pedagogy and the curriculum and offer examples and resources to support practice.

A GLOBAL CRISIS

We are living in unprecedented times; human activity is now recognised as the key driver of a global environmental crisis. There are multiple problems ranging from soil degradation, forest fires, pandemics, plastic pollution, sea level rise and extreme weather events, and they are all connected in different ways. The latest reports from the Intergovernmental Panel on Climate Change (IPCC) (2021) and Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) (2019) detail the science behind the events which are causing disruption in all parts of the globe. They both call for radical and urgent change to avert disaster in the years ahead.

When the first humans evolved on Earth several million years ago they emerged into a world that was probably richer in biodiversity than ever before. It had taken over 3,000 billion years – a massive time span – for life to develop in all its variety and complexity. The first stages were tentative and prolonged and great numbers of species were wiped out by mass extinction events along the way. However, after each catastrophe life eventually re-emerged, and it did so in greater abundance and with increased resilience. Today we are witnessing the sixth mass extinction of life on Earth. However, rather than being the result of natural causes, the current crisis stems from human activity. We have entered an age which geologists call the Anthropocene to denote the epoch in which people are the dominant influence on climate and the environment.

It is not just the climate and environment that are on the brink of disaster. The list of crises can easily be lengthened to include issues such as social injustice, gender inequality, health and social care and poverty.

INFO 27.1

These statistics powerfully illustrate the unsustainability of contemporary living.

- Global wildlife populations have dropped by around two thirds in the last 50 years (WWF, *Living Planet Report*, 2020).
- The richest one per cent of the world's population has more wealth than the rest of the world combined (Oxfam, *Time to Care*, 2020).
- Global warming is likely to breach the critical 1.5 degree threshold by 2030 if carbon emissions continue at present rates (Mercator Institute website).

KEY READING

Attenborough, D. (2020) *A Life on Our Planet: My Witness Statement and Vision for the Future*. London: Witness.

This book chronicles the decline in wildlife which the celebrated naturalist David Attenborough has witnessed during his time as a broadcaster. He argues that we need to abandon the notion of endless economic growth, switch to clean energy, rewild the land and seas, stabilise our population and seek to live more balanced lives. It's a tall order but what are the alternatives?

THE IMPORTANCE OF SUSTAINABILITY

The challenge that lies ahead and the key issue facing our civilisation is to find ways to address these crises and move towards a more sustainable future. A seminal attempt to define what this might involve is found in the Brundtland Report, *Our Common Future*, which called for sustainable development that

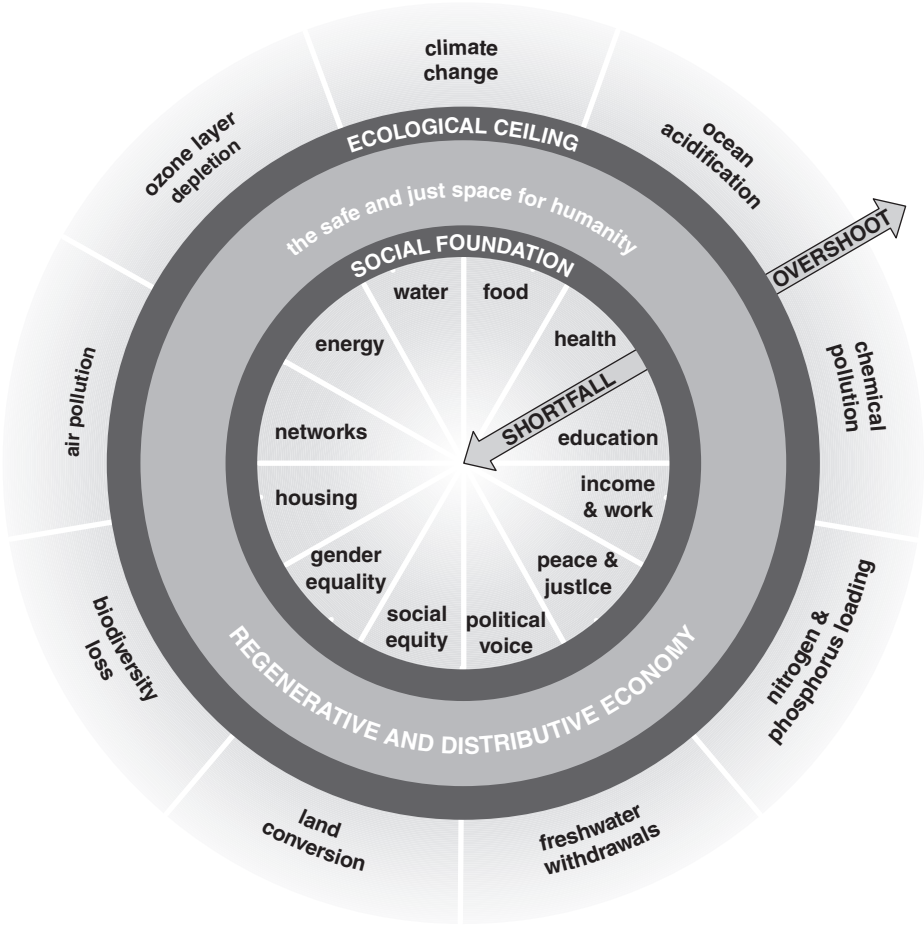

Figure 27.1 The ring doughnut of social and planetary boundaries is one way to visualise sustainability, and provides a compass for human progress

Source: https://commons.wikimedia.org/wiki/File:Doughnut_(economic_model).jpg

'would meet the needs of the present without compromising the ability of future of generations to meet their own needs' (WCED, 1987: 2.1). This definition focused attention on issues of intergenerational and global equity while recognising that human needs are underpinned by environmental, social and economic security.

Recent thinking about sustainability offers a more detailed understanding of what a 'safe and just' space for humanity might look like. Johan Rockström and his colleagues at the Stockholm Resilience Centre in Sweden have drawn on decades of research to identify nine biophysical boundaries which they believe are crucial to the stability and balance of life of Earth (Rockström and Klum, 2015). If these boundaries are breached it will not only result in catastrophic environmental change but there is also a risk of triggering runaway effects driven by positive feedback which will make matters even worse. Recognising that sustainability also involves social and economic factors, Kate Raworth (2017) has developed Rockström's model using the visual metaphor of a ring doughnut. In Raworth's visualisaton the doughnut is bounded by ecological overshoot on one side (natural boundaries) and social deprivation on the other (welfare limits). If humanity is to thrive and prosper it needs to position itself inside the ring (See Figure 27.1).

THE ROLE OF EDUCATION

Education has long been seen as making a key contribution to addressing society's problems and it is now widely regarded as having an essential role in promoting the transition to a more sustainable future. Numerous agencies and international bodies have spelled out what they think needs to be done. For example, the United Nations (UN) Decade of Education for Sustainable Development (2005–14) was a notable attempt to integrate the principles, values and practices of sustainable development into all aspects of education and learning. Since then, quality education has been identified as one of the UN Sustainable Development Goals (SDGs) and education is seen as integral to the realisation of all 17 goals. The SDGs apply to the period 2015–30 and have garnered considerable support at both grass-roots and policy levels. They also provide an important framework for schools across the world. The target that relates directly to education articulates the requirement that by 2030:

> *all learners acquire knowledge and skills needed to promote sustainable development, including among others through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development.*
>
> *(Indicator 4.7)*

Within the UK context, a youth-led campaign called *Teach the Future* (2021) has been influential in recent years, lobbying government with a student-written draft Climate Emergency (and Biodiversity) Education Bill for England – the first of its kind. Its aim is 'to urgently repurpose the entire education system around the climate emergency and ecological crisis' (teachthefuture.uk). This means including sustainability content in all subject areas of the curriculum, incorporating it into teacher training as well as vocational programmes through green skills development. A statement by the Secretary of State for Education, released to coincide with the COP 26 conference in Glasgow, declared that 'education is key to fighting climate change' (DfE, 2021). A Climate Change and Sustainability Strategy is due to be launched by the Department for Education

in 2022, providing an explicit commitment to climate change education. These developments are important as they demonstrate both the international and national commitment to incorporating sustainability into the school curriculum.

CRITICAL QUESTION

Why do you think it has taken so long for sustainability to start to feature in the primary school curriculum in many countries around the world?

SUSTAINABILITY EDUCATION IN PRACTICE

Sustainability education is different from traditional school subjects as it is an emerging area of study and lacks the concepts and frameworks which provide the structure for established disciplines. This can make it challenging to know how to approach it in the classroom. Figure 27.2 provides a framework for thinking about sustainability education.

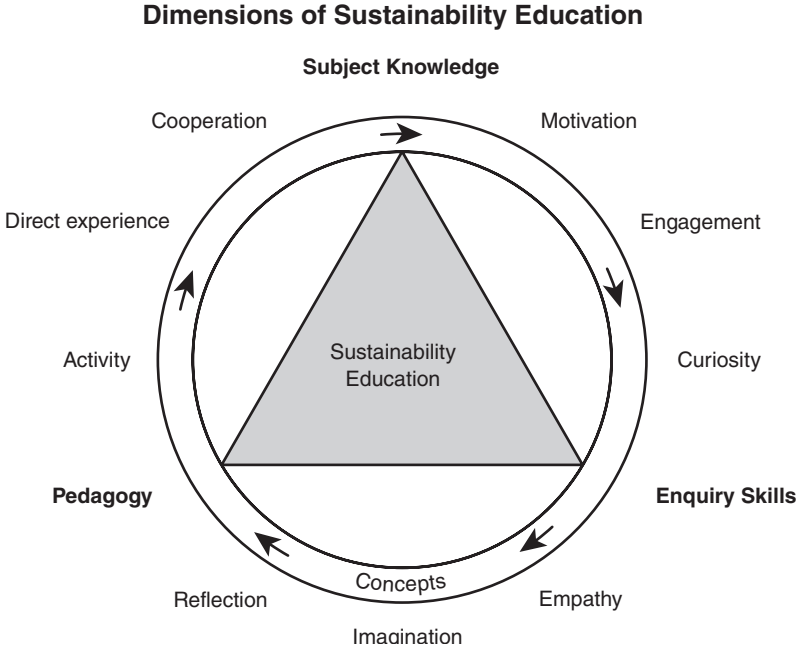

Figure 27.2 Knowledge, enquiry skills and pedagogy come together in a virtuous circle to deepen pupils' understanding of sustainability education

Source: Scoffham and Rawlinson (2022)

The Harmony Project offers a working example of how a holistic approach to sustainability education can be developed within primary school contexts as well as free downloadable resources you can access.

CLASSROOM LINK

THE HARMONY PROJECT

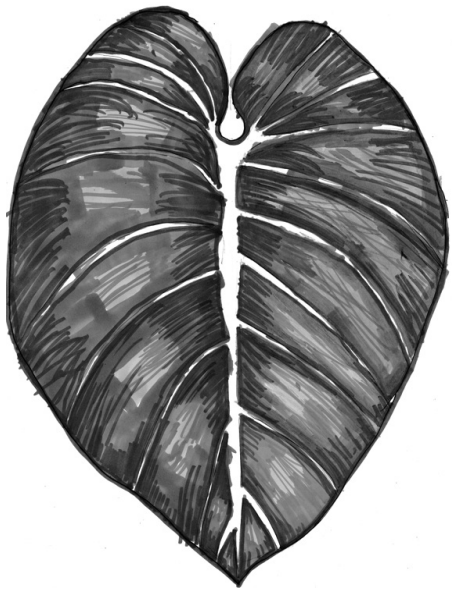

Figure 27.3 An amazing plant: image produced from the Harmony Project

What is the Harmony model of sustainability education?

The model of sustainability education that has been developed by the Harmony Project provides teachers with a way to reframe the primary curriculum around the sustainable practices we see at work in nature, practices which maintain the health, resilience and dynamic balance of the natural world – practices that the Harmony Project refers to as 'principles of Harmony'. It is a model that evolved within a primary school context as a teacher-led curriculum development initiative and promotes a 'joined-up' approach to learning with sustainability at its heart, drawing together content from across the curriculum and presenting it in ways that makes sense to children.

What does this look like in practice?

The Harmony approach organises learning into themed enquiries, each of which presents students with an overarching question – for example, 'Why should we protect the rainforest?', 'How can we ensure our oceans stay amazing?' or 'Why are bees so brilliant?'. Each 'enquiry question' guides the children's learning – and

their reflections on their learning – over the course of a half term and brings together subject-specific knowledge and skills in a way that is coherent.

It is designed to appeal to children's natural curiosity and engages them in the learning process by encouraging them to ask their own questions, too. Following this approach, as part of their learning about the rainforest, children in lower KS2 use data in Maths to find out about the climate in areas of rainforest; script and deliver presentations in English about an aspect of these unique habitats that interests them or about the threats they face; innovate, create and edit a rainforest soundscape in music and computing; and sketch and paint one of the amazing plant or animal species found in rainforest environments in art.

Each enquiry culminates in a memorable event to celebrate the children's learning journey – a 'Great Work', which further connects them with their learning through a meaningful experience.

The planning overview for the enquiry 'Why should we protect the rainforest?' along with supporting materials and other free resources, can be downloaded from www.theharmonyproject.org.uk

SUSTAINABILITY PEDAGOGY

Teaching about sustainability needs to be handled carefully, providing opportunities for practical 'real-life' engagement and cultivating an ethic of hope. Learning about the state of the world and realising how it is impacting on people's lives and is set to dominate the future can be overwhelming. Primary school children are particularly vulnerable because they are in the middle years of childhood and still forging their sense of identity and belonging. Perhaps the most obvious risk is that pupils will become anxious and upset as they learn about sustainability issues. It is therefore important to introduce concepts sensitively and in ways which connect with the familiar. Picture books are an excellent way of introducing young pupils even to complex sustainability issues.

CLASSROOM LINK

Look for dramatised readings for these and other 'sustainability' stories on YouTube.

The Trouble with Dragons by Debi Gliori (Bloomsbury, 2009) focuses on overpopulation and biodiversity loss in a simple rhyming text that is accessible to early years pupils.

One World by Michael Foreman (Andersen, 1999) is an evocative examination of the impact of water pollution.

Belonging by Jeannie Baker (Walker, 2008) shows how a dreary urban street can be transformed into a green oasis.

It's Up to Us by Christopher Lloyd (What on Earth, 2021) explores how nature operates in a world without humans. It then shows the damaging impact people have had on the planet and finishes by proposing a series of new pledges to make a difference – a Terra Carta.

Sustainability pedagogy emphasises diverse ways of knowing. Cognitive knowledge, the ability to recall and marshal facts, is valuable in all subjects but needs to be balanced by other ways of knowing. Paying greater attention to the three 'H's (head, hands, heart) broadens out our ideas about knowledge and how it is acquired. As the environmental campaigner Satish Kumar puts it, children learn best when they use their whole bodies and employ all their senses; 'knowledge without experience is only half the story' (2021: 18).

Direct experience and hands-on investigations are then important aspects of sustainability pedagogy. Outdoor learning introduces children to nature and their surroundings in a very direct and meaningful way. Forest school is one approach to outdoor learning that has become particularly popular in primary schools and aims to promote strong connections with the natural environment. Research indicates that those who care for the environment as adults are often those who learned to love it in their childhood (Gill, 2014). Some schools have set up their own gardens, planted trees or engage with their local community spaces to create opportunities for children to develop connections with the natural environment.

Active learning involving practical enquiries, fieldwork and environmental action is also beneficial because it gives pupils a sense of ownership and control. It is important that children do not see themselves as victims of events which they are powerless to change. There has been considerable debate about whether it is honest to be hopeful in the face of the global crisis that we now know threatens our civilisation. However, rather than presenting sustainability issues as intractable problems, they can also be seen as a set of challenges that require solutions. Thinking about the future that we want, both locally and globally, helps to shift the focus towards a positive approach (Hicks, 2014). So too does expressing gratitude for the wonders of the world, from the colours of the autumn leaves to the shape of the clouds in the sky (Macy and Johnstone, 2012). Indeed, even learning about the facts behind a particular issue can be empowering as it serves to dismantle unfounded fears.

CRITICAL QUESTIONS

Can you think of any experiences in your life which have evoked a sense of awe and wonder, albeit on a small scale? Why were they so powerful?

SUSTAINABILITY EDUCATION AND THE CURRICULUM

There is no need to see sustainability education as a new subject which somehow has to be squeezed into an already overcrowded curriculum. When sustainability education is viewed as an 'add-on', when it makes an appearance only during a theme week, or when it resides solely in certain parts of the curriculum (in geography and science, for example), we risk communicating to children the idea that issues of sustainability can be viewed as somehow separate from the rest of learning. In fact, we know that the exact opposite is true. It is only when we learn to see the world and all the livings things within it – ourselves included – as an interdependent and deeply interconnected whole that we can start to consider our own actions, behaviours and attitudes through the lens of sustainability and to move towards more sustainable ways of living and being.

Sustainability can be incorporated very naturally within existing structures and subject areas. In design and technology, for example, pupils can compare the environmental impact of using different resources; in history, studying the voyages of exploration will help to illuminate why some countries today are so much richer than others; while in English there is a plethora of stories on environmental themes. The links to science, geography and citizenship are manifest. Although these subjects provide obvious places to develop key knowledge and skills base, all subject areas can and should be incorporated. Making connections is a distinguishing feature of sustainability education which sets it apart from other subjects. Traditionally, scientific thinking often depended on classification and breaking phenomena down into smaller and smaller units so they could be studied in detail. This has proved extremely valuable, but it came at a cost. Understanding the cyclical processes of nature and the different forces which shape our society requires a different approach. Ideas such as feedback loops, emergent properties, symbiosis and systems thinking help to reveal the networks and interactions which underpin all forms of life and they are proving a particularly powerful way to understand the current global crisis. Capra and Luisi (2014) encapsulate this idea when they declare that because all phenomena are ultimately connected, a holistic perspective is essential to understanding the world and our place within it.

This is most easily achieved in primary school contexts through an enquiry-based approach to learning that can incorporate all aspects of the curriculum. Many schools already undertake project-based enquiries on specific themes such as climate change, deforestation or plastic pollution. These have the advantage of being topical and can be adjusted in the light of current events. They can also draw upon the interests of a particular class or group and can introduce children to relevant knowledge in an organic rather than prescribed manner. This can support their growing understanding of general sustainability principles, their sense of self and their awareness of others. However, it is important to bear in mind that sustainability education is much broader than a single issue. While climate change and global warming have taken centre stage, biodiversity loss, health, food security, global inequalities, refugees and migration are some of the other aspects of sustainability which have equally profound implications and should be considered as appropriate areas of enquiry.

CRITICAL QUESTION

How have you learned about sustainability (if at all) in the different phases of your education?

A challenge can be that if sustainability education is seen as permeating the entire curriculum, individual pupil progress may not be easy to isolate and quantify. On a general level, however, the depth of a child's thinking and understanding about a specific issue is a useful success indicator. Achievement may be evidenced through a pupil's ability to weigh different arguments and their capacity to think critically and creatively about a problem which they have investigated. These are qualities which develop gradually with age so may only be evident embryonically in Early Years and Key Stage 1 settings. Another approach is to compile a portrait of pupil achievement that focuses on three different dimensions: (a) knowledge and understanding, (b) fieldwork and investigations, (c) critical thinking and reflection. These categories recognise the multifaceted dimensions of sustainability education and acknowledge its various manifestations including its local and global dimensions. They also acknowledge spiritual and emotional, as well as cognitive learning.

KEY READING

For an in-depth critique and analysis of sustainability education see Scoffham, S. and Rawlinson, S. (2022) *Sustainability Education: A Classroom Guide*, London: Bloomsbury Academic. With over 180 age-related teaching ideas, this book provides a progressive framework spanning all curriculum areas and is applicable to a wide range of settings.

CHAPTER SUMMARY

It is now clear that the future will be radically different from anything that has gone before. Helping children to develop the resilience to cope with uncertain challenges is a fundamental educational task. Education also has a key role to play in helping to forge new approaches and mindsets to current problems. Recognising that, collectively, we have the power to choose our future shifts the focus of the sustainability debate from technological solutions to the attitudes and values which guide our lives. How to live and flourish within planetary means is the fundamental issue facing the world today. The children who are in classrooms today will inherit the world in the years to come and schools are the places where they will develop their ideas.

ASSIGNMENTS

If you are writing an ITE assignment on sustainability education you might find it useful to consider the following questions:

1. What do you think the purpose of primary education is? Is this reflected in what you know about education policy and what you have experienced in practice? If not, where are the tensions or conflicts?
2. Could and should sustainability be integrated into the primary curriculum? If so, what would need to change?
3. Does the fact that sustainability is a complex and contested concept undermine how it can be approached in the classroom?
4. What do you think are the key challenges and opportunities for integrating sustainability into your practice?

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