



# Putting Sustainability at the Heart of Education

## *Environmental Sustainability in Digital Learning*

Tuesday 25<sup>th</sup> January 2022 | 16:00 – 17:30  
Summary Paper

### Context

The global pandemic has had a significant effect on the education sector and the way in which education is delivered, as various lockdowns over the last twenty months have forced the move to mass online learning. The sector has responded remarkably to this sudden shift to digital learning, and, as we look collectively towards education recovery, there is a unique opportunity for schools and colleges to further accelerate digital learning to deliver high quality education, whilst ensuring environmental sustainability is at the heart.

Following COP26 and the requirement set by the Department for Education for schools to be net-zero carbon, the government recently published the [draft Sustainability & Climate Change strategy](#) in November 2021. The strategy sets out the department's plans for the education sector to be world-leading in sustainability and climate change by 2030. The strategy outlines four key aims:

1. **Education and skills:** ensuring young people are prepared for the impacts of climate change through learning and practical experience
2. **Net zero:** reducing emissions from education buildings, meeting legislative targets and providing opportunities for young people to engage with net zero plans
3. **Resilience:** adapting education buildings and infrastructure to mitigate against the possible effects of climate change
4. **Environment:** improving biodiversity in education settings to create a better environment for future generations

If we are to meet the wider target of becoming net zero by 2050 and support the next generation of young people to tackle climate change and develop the green skills needed for the future, schools will have a pivotal role to play. As the education sector looks towards harnessing the potential of technology, sustainability must be at the heart of any digital learning offer, as well as being central throughout schools and colleges more widely.

Throughout the course of the pandemic, EPI has run a series of events exploring the lessons of the digital shift to learning, particularly considering the role of digital learning in education recovery and embedding digital learning beyond Covid-19. Our most recent programme of work in this area focused on building sustainability in digital learning and in schools more widely.

In January 2022, we brought together policymakers, school leaders and sector experts to discuss embedding sustainability in schools and within the digital learning offer. The discussion explored the environmental and financial implications of technology, the implications of the 2050 climate-neutrality target for schools and colleges and measuring 'carbon footprint by pupil'. It also covered how to successfully embed sustainability in the curriculum, the opportunities technology offers to enable young people to engage with sustainability initiatives and the potential role of data in improving climate education.

This paper provides a summary of the discussion that occurred during the event. We are grateful to all participants for their contributions.

## The Education Estate

With schools and universities representing 36% of total UK public sector building emissions, and schools alone spending around £360m per annum on energy, reconfiguring the education estate to make it more energy-efficient and sustainable will be key to meeting wider net-zero targets.

The Department for Education has already announced that all new schools delivered by DfE (not contracted) will be net zero in operation by 2023. Furthermore, all further education colleges applying for capital funding from DfE will be required to consider environmental sustainability, carbona reduction and adaption measures, according to government's targets and objectives.

As discussed at this event, the department's draft sustainability strategy also commits to a range of other measures to improve the sustainability of the education estate, including launching the National Education Nature park, which aims to digitally bring together the land across the education estate to promote the cultivation of the natural habitat, enhancing biodiversity and access to nature. There is also the commitment to equipping young people with the skills that go beyond the workplace and give them an understanding of environment across the country, including geospatial mapping, measurement and plotting.

The education estate focus considers the impact of buildings and grounds but also the impact of supply chains in daily activities of those buildings. One speaker noted that it could be difficult for schools because it does require expertise. They noted that in their MAT, they had put an onus on the supplier and supply chain to demonstrate how they meet sustainability targets, when considering factors such as waste management and energy consumption.

Part of this will be assessing how to ensure that there is the biggest environmental return on financial investment, and there was enthusiasm for the government to work with higher education and business to understand the best way to do this.

Adapting and re-designing schools to be more energy efficient is not the only measure that must be taken to ensure sustainability of the school state; school buildings will also need to be designed to protect against the effects of climate change. According to the Climate Risk Assessment, nearly half of schools (10,700+) are at significant flood risk, and this number is predicted to increase by a further 4,000 by 2050.

One speaker noted, however, that without government investment, it will not be possible to get the types of buildings needed. Their calculation was that it would need a further £1.5 billion in funding than already committed and they emphasised that buildings must not co-constructed with the sector, not imposed. Other speakers agreed that often solutions are imposed from above, without always asking whether schools and colleges have the capacity and expertise required. There is no one size fits all for primary, secondary, further education and higher education and this needs to be taken into consideration. It's good to set targets for 2030, but the question remains of where are we now?

## Curriculum

Curriculum is evidently a critical aspect of any sustainability initiative within the education sector; embedding climate education in the curriculum would support young people to develop the skills needed for the green jobs of the future and empower young people to take action.

Baroness Barran spoke of the work already being done by the Department for Education to embed sustainability as a core part of the curriculum. In Early Years, 'understanding the world' is woven into the curriculum and children at primary school learn about seasons, habitats in the national curriculum. At secondary level, pupils study water cycles and climate zones, and in 2017 a climate science A Level was introduced in further education.

Curriculum is also a focus of the draft Sustainability and Climate Change Strategy, which presents an opportunity for primary schools in particular to learn more about nature, as well as offering more support for teachers to deliver lessons on climate change. Young people have been reporting that teachers are not as comfortable as they could be in

delivering lessons on climate change, and there is clearly a need for more support and CPD to be given to teachers to enable them to teach climate education effectively.

In fact, from December 2021, all Further Education teachers trained via an apprenticeship will now be required to integrate sustainability into their teaching, through promoting sustainable development principles in their subject specialism and modelling sustainable practices.

Oak National Academy, an organisation formed during the pandemic which provides online resources for teachers as well as remote education for both pupils and teachers, is currently developing sustainability resources that can be used within the wider curriculum to deliver climate education.

One speaker pointed towards a landmark report by UNESCO which demonstrates how the impacts of climate change are widespread and increasing at previously unforeseen rates. Key to addressing issues of climate change at a global level will be empowering young people and embedding sustainability into the curriculum. Yet, only half of the curriculum and education frameworks of 100 countries surveyed by UNESCO mention climate change. There is clearly more that needs to be done in this area and action must be taken quickly and decisively.

Technology can play a pivotal role in teaching climate education and as we look towards further developing the digital learning offers implemented during the pandemic, considering how to utilise technology and build sustainability into digital learning will be critical to ensuring sustainability is at the heart of education.

### Funding and finances

Digital learning is inextricably linked to sustainability, both financial as well as environmental. Financial sustainability evolves more effectively from changes in ways of working, rather than trying to make cuts. One speaker mentioned the importance of thinking holistically, to consider what putting sustainability at the top of the agenda allows us to stop, as well as to start. For this speaker, the easiest change to spot was in terms of printing. All pupils having their own device fundamentally changed the way staff and pupils collaborated. In 2022 so far, this has saved 240 trees worth of paper and the reduction in energy consumption is equivalent to running 320 fridges for the same amount of time. In financial terms, the rollout of 1-to-1 devices has diverted a quarter of a billion pounds to other priorities.

There has been a trend in education to manage technology in education through period injections of funds, for example by providing grants for new technologies. One speaker felt this trend has hindered financial stability and, while funds were welcome, prevented considerations of other ways to promote financial and environmental sustainability. They noted how reducing the number of desktops on their education estates has generated

significant financial savings due to a reduction in maintenance needs and energy consumption. The migration to cloud-based storage has also brought much saving. While the cost of paying for the backup of cloud-based files is incurred, the shift in their institution is predicted to save £100,000 a year and has also reduced the need for supporting infrastructure such as air conditioning units, again saving energy.

The general consensus was that we are at a point where we are trying to understand the most effective ways of delivering change. Practitioners are looking for the biggest environmental return on financial investment. The importance of data was highlighted; changes in practice must be data-driven, taking into consideration carbon dioxide emissions and how much energy is being taken from the national grid when using devices. One speaker mentioned their school is working with businesses and the Chambers of Commerce to develop an energy dashboard which will allow users to see and understand how their actions affect their carbon emissions, down to the pupil level. However, another speaker noted that deciding which technologies to invest in could be a minefield, requiring a lot of expertise and research, which is difficult for schools with less capacity for this work.

One panellist noted the three aspects they consider when deciding which digital technologies to invest in:

1. **Lifespan:** considering how long a device will last, and choosing those with longer life spans, means that there will be less waste due to decreases in production and reduced costs through longer periods of time before devices need to be replaced.
2. **Supply chains:** a huge amount of the environmental impact of technologies derives from how they are produced, rather than how they are used. Investigating supply chains is critical to ensure investment in those with lower carbon emissions.
3. **Energy use:** building on the investigation of supply chains, considering the energy usage of a device allows an education institution to choose technologies that create devices with low energy consumption, both saving the institution money and reducing their wider energy use.

These three parameters were felt to be a useful starting point from which to begin choosing which technologies, and providers, to invest in.

The three parameters also moved the panel on to a wider discussion on supply chains. Panellists felt that there has been a lot of movement on action that can be taken within school, such as turning off lights, reducing plastic waste and changing school dinner menus, but “we need to get stuck into the difficult things,” like investigating the supply chains of technology companies as well as pension providers that invest in oil and gas companies. While the mantra of “start with something small” is very valuable and empowers the individual, one speaker felt that if everyone does this, the aggregate may still not be as great as getting key players to make changes. Speakers felt it is time to hold the big providers that support the education sector to account.

Finally, while there was much enthusiasm for making changes within schools to create environmental sustainability and for the Department for Education’s *Sustainability and*

*Climate Change* strategy, the financing of these endeavours was raised as a critical hurdle. School boards are reporting that they have done what they can without further funding but cannot afford to invest in future projects without more government financing. One speaker highlighted the importance of lobbying the government and believes a further 1.5 billion pounds will be needed above what the government has already committed to be able to deliver on the plans set out in the draft strategy.

## International action

Looking beyond Britain's borders, panellists examined some examples of best practice on the international stage. This discussion recognised the importance of the global forum held at COP26 on Education Day, which "put education firmly on the map" in dialogue surrounding sustainability and saw world leaders "recognising the critical role played by education and learning in the transition towards a climate positive future". Despite this commitment, one speaker highlighted that only about half of the curricula and education frameworks of UNESCO member states mention climate change, highlighting that there is still much work to be done.

In May 2021, UNESCO launched its *Education for Sustainable Development for 2030* (ESD) which provides a blueprint for governments, civil society and education stakeholders "to reorient themselves in the direction of sustainability". Through promoting the inclusion of environment education across curricula levels around the world, the ESD hopes to empower young people with the values and agency to contribute to a better world. In particular, it promotes the transformation of whole schools so children can live what they learn in a greener community. The speaker highlighted that there is huge support for this vision of transformation; at the UNESCO 2021 World Conference for Education and Sustainable Development, 2,800 environment and education stakeholders from 171 countries backed the ESD. Yet, another speaker made the important point that while it is critical to set targets for 2030, we must also understand where we are currently in 2022 to reach these goals. Again, systematic monitoring and the collection of data was raised as crucial to track progress and steer future actions.

Moving from the global stage to the actions of individual countries, speakers mentioned notable examples set by other nations. Alongside Italy, which made 33 hours a year of climate education mandatory for every student aged 6-19 in 2020, speakers also noted the impressive actions of Costa Rica, which launched its first *National Climate Change Strategy* in 2009 calling for the "inclusion of climate change information in the country's formal education system at all academic levels and in multiple disciplines." This strategy was then updated and reaffirmed in 2018 in the *National Policy for the Adaptation to the Climate Change of Costa Rica*. Finally, a speaker also mentioned the laudable example of Kenya, which has taken a lot of action to mainstream ESD throughout the education system, and of Germany, which has for some years hosted a national platform on ESD that brings together

high-level representatives from the political, scientific and civil society communities to facilitate discussion and implement change.

On a smaller scale, one speaker also highlighted the ESD prize, awarded by UNESCO to schools and organisations, which this year went to inspiring projects in Palestine, West Africa and South America. This prize shines a spotlight on often quite small, pilot projects that offer examples of best practice to share around the world. Building on this idea, another speaker noted how their school's sustainability was structured around 10 big planet living principles which are closely aligned with the UN's sustainable development goals. This demonstrates the exciting possibilities of translating national, or even international strategies, into smaller scale projects that can empower individuals and institutions to work together for a greener planet.

### Inequality of access

Digital technologies both represent infinite access and present major accessibility hurdles. These technologies facilitate learning and engagement with knowledge far beyond the physical bounds of the surrounding environment and present innovative opportunities to improve access to education for pupils with SEND. These possibilities were demonstrated extensively during the pandemic and indeed, one speaker mentioned the work of Oak National Academy that provides remote education and online learning resources for pupils and teachers. Yet, at the same time, these technologies are often very expensive, and another speaker noted that in their schools' rollout of 1-to-1 devices for all 32,000 pupils, they knew they could not ask parents to contribute to the rollout if true equality of access was to be achieved.

Another speaker also felt that in fact television, or other technologies, "is no insight into the environment – for young people these days, they choose their own diet and I doubt it includes the kind of programmes I watch," referencing David Attenborough's latest series *The Green Planet*. They felt that taking children out into the country is critical, so they can experience the beauty of the natural world and "prove that there's something out there worth saving." They advocated for more field trips and for teachers that lead these, "the joy of seeing you people going out into the environment and dipping their toes into the water is such a motivation." However, they noted that there is a real social divide between public and private sector education institutions in terms of field trips and the education estate itself.

There is great inequality between the most privileged and most disadvantaged schools, with some inner schools having no grounds to rewild, even "no grass." They felt "we have trapped children", particularly the most vulnerable, through more dangerous roads and increasingly expensive public transport, forestalling opportunities to explore wild places. Regarding field trips, across the board, there have been increasing concerns over health and safety, as institutions move to risk averse strategies for fear of litigation. This speaker

highlighted that “sadly the ones that carry on are often the most privileged teachers from the most privileged schools.”

While throughout the discussion there was much enthusiasm for the inspirational actions of young people to protect the natural world and the possibilities innovative technologies can bring, the points raised on inequality of access were a critical reminder that much work remains to ensure that “saving the world” doesn’t become solely “middle-class terrain.”

### Upskilling for the green economy

In a timely conjunction with the publication of the *Levelling Up* white paper that will see the establishment of a Future Skills unit and the expansion of Skills Bootcamps, a significant focus of the discussion was on the importance of equipping children and young people with the skills and experience needed to flourish in a green economy. This is critical, both to facilitate the fulfilment of young people’s potential and to ensure that the green economy is sustained by a skilled workforce to meet the objectives of protecting our natural world and halting climate change. One speaker highlighted that a key lesson of the Covid-19 pandemic is that it is not safe to plan on the assumption that the future will look like the past; we need contingency planning and forward thinking. This requires deep investigation of the challenges that face the education sector – not only on how it greens itself as an estate but also how it prepares young people for employment and future green technologies.

In terms of how to go about this, it was noted that technology will be increasingly a part of the way current and future generations experience the world. Thus, for the 440,000 green jobs currently being created and the further 2 million jobs more broadly expected through changes in the economy, technological skills will play a key role. One speaker mentioned the launch of the National Education Nature Park, a project that will bring together virtually the land across the education estate to promote an appreciation and cultivation of the natural habitat and its biodiversity. Children and young people will be able to upload their progress on to the park’s digital mapping service, to see how the park is “growing” and develop other key skills such as geospatial mapping, data collection and analysis. The speaker felt this project will equip pupils with skills needed beyond the classroom, that would be truly relevant for the workplace in the future green economy. Another speaker noted that an excellent green careers service will be needed to get young people into the promised green jobs, a key practical consideration in facilitating the move from the classroom to the workplace.

### Taking a whole-system approach



A key theme that arose from the discussion was the need for collaboration and a whole system approach to building sustainability in education. There needs to be more joined-up working between different actors in education and any strategy must be co-constructed to utilise different expertise.

Several speakers emphasised the importance of governance and leadership in ensuring sustainability is at the heart of education. If environmental sustainability is to be truly threaded through every school and group, then it has to be built into a school strategy. This means that school governing bodies need to decide sustainability is a priority and it must be built into a whole-school approach.

A National Governance Association (NGA) annual governance survey in 2020 asked respondents who had started tackling sustainability in their school or college. Just over 40% answered that they had, although this was considered to be optimistic. One speaker emphasised that most governance have only just started thinking about sustainability.

Governance and leaders need to be better equipped to embed sustainability in their schools and colleges. One organisation that has provided useful guidance on this is the NGA, who has produced guidance for boards on adopting a whole school approach. This means adopting the 4 Cs: culture, community, campus and curriculum. It is also important that the board is able to ensure the capacity of leadership and other staff to deliver on sustainability. One suggestion was for every school to have a sustainability expert on the senior leadership team.

Another issue discussed was the financial capability to deliver on this; one speaker noted that boards were reporting that they had done all they could without sufficient funding but that it wasn't enough and was heavily restricting their capabilities to deliver sustainability initiatives.

Speakers discussed the need for alternative actors from both within and outside the education sector to work more closely together. One particular area for collaboration mentioned was between schools and trusts themselves. Multi-academy trusts could be valuable in this regard, as they can act as knowledge-building institutions and share expertise.

On the other hand, one speaker noted that the mantra of 'start with something small' is great, but the aggregate of everyone doing this still would not be as great as key players making substantial changes. For example, if the biggest companies and providers make changes, this could substantiate more than what individual schools can do. Businesses and higher education institutions should be a key part of the wider initiative.

One pivotal topic within the discussion was that of the involvement of young people in sustainability initiatives. Speakers were very impressed with the engagement of young people in sustainability and felt that there was a real appetite and clamour from students to take action. In fact, several speakers felt that sustainability was being led by student voices; one MAT leader described how the student senators in their school were heavily involved,

leading eco clubs, forest schools, planting trees across schools estates and holding clothing exchanges.

Speakers were keen to emphasise that the voice of young people must be central in any sustainability efforts – it's not about what the sector is doing *for* or *to* young people, but what they are doing *with* young people. Not including young people in these conversations is a direct cause for the 20% levels of eco-anxiety young people are experiencing as they are concerned that not enough is being done. There was some concern, however, that it could also lead to further anxiety among students; thus, speakers felt that it was important to make young people aware of the contribution they were making in a positive way. However, there was some concerns voiced that we should be careful to make sure that the burden doesn't fall too heavily on young people and collaboration will be key to this.

## Conclusion

The drive within the education sector to ensure sustainability is at the heart of schools and colleges was evident from enthusiasm and engagement of panellists and attendees at this event. It was clear, however, that many within the sector are only at the beginning of this journey and the next steps will be crucial to ensuring schools and colleges are able to meet net-zero goals, that young people are supported to take action and prepared for the green skills of the future.

This will be by no means an easy feat. It will be crucial that the sector takes a joined-up approach to delivering on sustainability, and school leaders, teachers, students, businesses, higher education and government work closely together to ensure a whole-system approach that utilises expertise and delivers real impact.

Digital learning will have a significant role to play in this; not only will schools and colleges need to ensure they are prioritising sustainability when selecting technology and within their digital learning offers, but technology itself can be a useful tool in environmental education and initiatives.