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Climate Change: how should public education respond?

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ABSTRACT This article makes the case that schools have a critical role to play in mitigation of and adaptation to climate change, and that this responsibility should be central to any process of reimagining the role, governance and potential of public education.

Introduction

The placards, brightly coloured, waving in the uncannily warm sunshine of a late-winter morning, read: 'It's Our Future' and 'I want you to panic'. In February and March this year, thousands of school students came out on strike demanding action on climate change. The response from the UK education establishment was mixed. Some schools actively supported their students to protest; others used the event as a focus for learning about climate change; others locked their gates and refused to allow children out of the building. England's Education Secretary, Damian Hinds, responded by saying that the protests would 'not do a thing to help the environment' and would unnecessarily cause headteachers 'extra workload' (Adams et al, 2019).

The challenge that these strikes pose to educators today, however, is a more fundamental one than working out how to handle mass student absences. They require us to ask: what is the responsibility of public education in an age of climate change?

Climate Change Realities

To answer this question, we need first to recognise the current situation. The climate science is settled and has been for many years: global warming is a result of human activity; in particular, it is a result of greenhouse gas emissions that are the product of the dependence of industrialised societies on fossil fuels and

industrial forms of agriculture (ETC, 2017). This activity is both generating greenhouse gas emissions and destroying the natural habitats that sustain viable global ecosystems and mitigate warming (IPCC, 2014).

Despite this settled science, and as a result of inaction and lobbying over the last four decades (Oreskes & Conway, 2010; Rich, 2018), current efforts to reduce emissions of greenhouse gases are far behind what is needed to limit global warming to the target of 1.5°C above pre-industrial levels agreed in Paris in 2015 (Blundell, 2018; IPCC, 2018), and are more in line with producing warming of 3-4°C above.[1] While local predictions of such impacts are far from exact, 2 degrees of warming is likely to bring an increase of millions of Europeans exposed to water scarcity, a massive increase in the UK in damage from river flooding, and an intensification of droughts in the Mediterranean basin and Africa, along with significant increases in migration of displaced populations. At 4 degrees, sea-level rises claim coastal cities, Europe is in permanent drought, and much of the south of the USA, as well as vast areas of China, India and Bangladesh, is uninhabitable.[2] The timescale for such changes at 2 degrees is, at optimistic estimates, no later than the middle of this century, well within the lifetime of current students. The latter sobering 4-degree scenario explains why mitigation is an urgent and important task (see also Oreskes & Conway, 2014).

Climate change, however, is not a future problem, it is a present reality. Current levels of warming are already having effects on wildlife and human populations.[3] In the UK this is seen in more extreme weather, disruptions to food supplies and migration challenges.

It is therefore necessary to do two things: mitigate and adapt. Mitigation requires making significant reductions in greenhouse gas emissions over the next 5-10 years in order to prevent runaway climate change. For the wealthier nations, at best estimates, this means around an 80% reduction in carbon emissions by 2030 (Anderson & Broderick, 2017; Larkin et al, 2018). This will require non-trivial changes to infrastructure, consumption patterns and lifestyles.[4] Adaptation requires us not only to develop such infrastructural changes, but also to creatively invent new ways of living on a 'lively planet' (Ghosh, 2016).

Neither of these will be straightforward and there will be no easy answers. The UK is, like all westernised nations, still dependent upon fossil fuels and globalised industrial agriculture. Its core economic structures are premised upon the assumption of continued economic growth. Everyone is, to some degree, entangled in the production of climate change. Not everyone, however, is responsible to the same extent or impacted in the same way by its effects. Half of emissions are caused by 10% of the global human population (a 10%, notably, that includes the most 'highly educated' academics and professionals in western society); reciprocally, it is the poorest and weakest who are most likely to be impacted (Chancel & Picketty, 2015).

Under these conditions, what is the role of public education institutions? Schools, like everyone else, will need to learn how to mitigate and adapt.

Mitigation

The basic requirement of mitigation is to stop making matters worse. Here, education has a problematic track record. School buildings are becoming more carbon intensive and less energy efficient (Moncaster & Simmons, 2015); the development of whole-school energy, transport and waste initiatives remains the purview of a tiny minority of schools in the UK [5]; Ofsted has no obligation to engage with questions of sustainability; new school buildings are not required to be carbon neutral, meaning that new carbon emissions are being built into the system with every new school building; the main UK teaching union's apparent engagement with climate change is limited to a single statement on a soon-to-be-defunct website, that teaching should encourage students' 'sense of optimism about their future'.[6]

In other words, students returning from protests to ask their school leaders precisely how their school is helping to mitigate the problem of climate change will, with some notable exceptions, be disappointed in the answers that they receive. In the face of evidence that the ecosystems that sustain human life are being destroyed, students are confronted with institutions that are showing little effort to make changes and that offer them few tools to understand or respond to the wider political, social and ecological nature of climate change (Gough, 2015). In David Orr's words, 'students learn, without anyone ever telling them, that they are helpless to overcome the frightening gap between ideals and reality' (Orr, 2004). Indeed, the evidence today is that the more highly educated students are, the more likely they (we) are to be contributing to ecological damage through over-consumption, flights and other lifestyle choices (O'Neill et al, 2018).

This need not be the case. A public school at the heart of its local community has the potential to play a powerful role in mitigation. Land and buildings [7], food supplies, purchasing strategies and transport policies can significantly reduce carbon emissions [8] and in so doing address equally important debates about children's access to quality food, healthy lifestyles and clean air. More importantly, the public school has the potential to *convene* publics around the challenge of reducing emissions. The public, after all, is not an inert body of people with a set of static opinions to which schools are simply accountable. Rather, publics are dynamic, they flare into existence when issues are not being addressed elsewhere (Latour, 2004; Callon et al, 2009).

A public school in the age of climate change, then, can bring together its diverse communities to work out the difficult choices and creative possibilities presented by global warming. Schools can act as hosts for public teach-ins, sharing expertise and developing strategies for reducing emissions or fostering biodiversity (see e.g. Lysack, 2009). Groups of students, teachers and parents working together can make visible the problems of transportation and mobility that schools are increasingly causing; they can bring pressure on questions of land use, food supply, biodiversity and investment decisions in the local area.[9] They can learn from and with groups – such as Transition Towns, Incredible Edible and others – who are already working to make transitions to low-carbon

communities. They can also, as public and inclusive institutions, play an important role in diversifying such networks. The school need not therefore feel powerless; as Anyon (2005) argues, a school is not alone if it can 'join the world of communities, families and students; ... advocate for them and emerge from their urgent realities' (p. 35).

Adaptation

As important as mitigation, however, is the question of beginning to adapt to climate change today. The adaptation challenges are, in the first instance, material – ensuring school infrastructure has the capacity to survive extreme weather; tree planting to help with cooling and shading; establishing the role of schools in welcoming and supporting climate refugees [10]; using land and buildings to produce food and water. The capacity to rapidly adapt schools to play these roles will necessarily be shaped by the governance and ownership structures in place – fully public schools, accountable to local communities and to a wider public, may respond differently from semi-privatised institutions accountable to shareholders and/or directly to a Minister for Education.

An equally significant feature of the adaptation required, however, is the cultural shift to recognise humans as being part of, rather than in control of, the ecosystem. The planet needs intellectually and emotionally to become alive to us again, the ground beneath our feet no longer inert but lively (Latour, 2015). This means learning to acknowledge 'a nature, an order, recognised as external to our will and with which we have to deal and find an accommodation' (Bonnett, 2004, p. 44). This is as fundamental a shift in thinking as was required by the processes of industrialisation, the Enlightenment, or the recent shift towards a 'knowledge economy' that has so dominated educational thinking for the last decade. It requires a recognition of the integrity of nature, of the fact that there are beings alongside which we are living, upon which we are dependent and with which we need to come to an accommodation. This means becoming aware of 'mutual participation in a world' (Bonnett, 2015) that is not just context for our existence, but a pre-existing space of beings.

A public school adequate for adaptation to a changing climate will therefore need to acknowledge a public not only of humans but of the beings that make up the biosphere. Attuning ourselves and students to this fact suggests an education that attends to nature in its complexity, one that draws as much on the arts as on science, as much on philosophy as on technology (Orr, 2004; Van Boeckel, 2013; Matthewman, 2017). Schools today, if given the freedom to develop curricula, have some of the tools already to support these processes – embedded in different subjects are practices of stewardship (learning to care and attend to what is already in existence), reflexivity (learning to question, to challenge, to understand the self, and to reflect), imagination (learning to envisage what might be possible, to model possibilities), and experimentation (learning to try things out, to invent, to rapidly iterate, to learn). Teachers need to be free to develop and expand on these for new times.

The shift necessary for cultural adaptation, however, also requires a number of fundamental changes: a process of grieving for the world and the beings that are being lost (Espen Stoknes, 2015); grieving for the fantasy of human centrality and technocentric forms of modernity (Andreotti, 2016); attentiveness without cultural appropriation to forms of knowledge that can provide guidance, such as historically disavowed forms of indigenous knowledge (Todd, 2016); attention to and learning from the material and embodied world (Bonnett, 2004, 2015). It also requires a recognition of climate change as a complex cultural, physical, economic and social reality that does not have simple answers, and that requires the creation of public spaces in which to address the inevitable tensions and conflicts about how to respond (Mouffe, 2004; Hulme, 2009).

Such shifts have the potential to engender a form of 'tragic optimism' (Frankl, quoted in Orr, 2004) that does not retreat to escapist techno-fantasies or to passivity and denial. Indeed, as David Orr argues, 'There are legitimate grounds for hope in hard times, but not one speck of ground for wishful thinking of any kind.' Balancing hope and fear, developing what Maria Ojala calls 'critical hope', will become a central role for the public school in this civilisational shift in worldview (Facer, 2019). This means creating opportunities to learn and act together, learning that others are working alongside to address the same challenges, and an engagement with complex realities rather than simplistic narratives (Ojala, 2016). Schools can build this critical hope with students and communities, as soon as they are empowered to begin to build it for themselves.

The student campaigners have demonstrated the capacity to confront the realities of a changing climate. For basic reasons of intergenerational justice, they cannot be asked to take this responsibility alone.[11] The unanswered question is whether schools will be liberated as a powerful social resource to facilitate a civilisational shift or whether industrial models of education, too closely allied to the institutions and beliefs of neoliberal modernity, will respond with business as usual.

Thinking Politically, Economically and Ecologically about the Public School

Returning to the topic of this issue of *FORUM*, we need to ask, then, whether it is possible that the removal of local democratic accountability for schooling will enable schools to play these roles over the next few decades, or impede them from doing so. Will free schools, established to meet particular sectional interests, be able to open up to the wider needs of communities in crisis under climate change? Without doubt, some will take advantage of their organisational and curricular freedoms to respond quickly to this challenge – a small number may even excel and lead in this area – but at a sustained, national and local level, the capacity for systemic change that is required is likely to be dissipated. Anyone interested in climate change, therefore, needs also to be

interested in inventing the new forms of school governance that will be adequate to changing conditions.

The political-economic debate over school governance, however, needs also and urgently to recognise that climate change is no longer a marginal special interest but is, quite literally, a question of the air we breathe and the food we eat today. Any analysis of the public role of education must, therefore, locate education as part of, not separate from, the question of how our society will learn to live with, and as part of, a changing climate. There are others acting in this area, there are clear steps that can be taken, and there is a clear role for schools to play within their communities. It is time for supporters and advocates of democratic public schooling to form alliances with those who have been working to address questions of environment and sustainability for years, to locate their work as central to a great reimagining of public education and get to work with critical hope rather than wishful thinking.

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Notes

[1] Kevin Anderson, Tyndall Centre UK, writes in a personal communication: 'add up the global NDCs (national pledges submitted to Paris and which are supposedly aimed at 'well below' 2°C) – and the global total is more in line with 3 to 4°C of warming'.

[2] The following website offers a more granular discussion of the probable impacts of climate change in different contexts: https://interactive.carbonbrief.org/impacts-climate-change-one-point-five-degrees-two-degrees/

[3] See, for example, the recent reports from both NASA and the World Wildlife Fund: https://climate.nasa.gov/evidence/ and https://www.worldwildlife.org/pages/living-planet-report-2018

[4] See the following for indications of likely changes needed: Akenji et al, 2019; Global Change: from adaptation to deliberate transformation (https://journals.sagepub.com/doi/abs/10.1177/0309132511425767); So You Say You Want a Revolution: transforming education and capacity building in response to global change (https://www.researchgate.net/publication/257588119_You_say_you_want_a_revolution_Transforming_education_and_capacity_building_in_response_to_global_change); Responding to Climate Change: the three spheres of transformation (https://www.researchgate.net/publication/309384186_Responding_to_climate_change_The_three_spheres_of_transformation).

[5] See, for example, the work of the eco-schools network and the School Farms network (https://www.eco-schools.org.uk/eyfs-primary-pathway/seven-steps/environmental-review/; https://www.farmgarden.org.uk/school-farms-network).

[6] https://www.teachers.org.uk/news-events/conference-2016/climate-change

[7] See David Orr's work at Oberlin College in the USA as an example of how an educational campus can make substantial steps to carbon neutrality by 2025 (https://www.oberlin.edu/environmental-sustainability/carbon-neutrality).

[8] See, for example, the work of Incredible Edible Todmorden (https://www.incredible-edibletodmorden.co.uk/).

[9] See the following list of colleges and universities in the USA that are demonstrating the capacity for practical action: https://www.sierraclub.org/sierra/cool-schools-2018/top-20-coolest-schools-2018

[10] The National Education Union already offers useful guides to schools on welcoming refugees (https://www.teachers.org.uk/equality/equality-matters/refugee).

[11] It is worth noting the ambivalent adult reactions to, for example, Greta Thunberg's leadership in this area – alternately belittling her and setting her up as offering salvation. The following online exchange to her UN speech is instructive: https://www.facebook.com/dn.se/videos/592401221186316/ (see intro and outro).

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ANOTHER WAY OF LOOKING:
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