Organising Hope: The role of schools in the era of climate change

The Caroline Benn Memorial Lecture, November 2021

Given by

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Summary
Climate change is fundamentally a collective educational problem – it invites us to ask whether we can learn, as a society, who we might be and what sort of world we might create, if we were no longer reliant on fossil fuels and the relentless extraction of natural resources for our existence. This is the inquiry that we need to start as a society, and schools are central to that project. Far from feeling powerless our challenge as educators is to recognise our capacity to bring this inquiry to life in our schools, our universities, our colleges and our practices of adult and informal education. We don't have the answers, nor should we claim to know in advance, what this new world might look like, but we can create the conditions in which we can learn, alongside our students, what it might take to 'renew our common world' (Arendt, 1956).

We can start to work this out with students, however, only once we confront our own emotions and fears, only once we let go of the wishful thinking that someone else is going to sort out the problem, that tech will save us or equally, that it's all too late for us to need to think about it.

There are two key areas in which we can work as educators. First, we can address the scientific, political, economic and cultural aspects of climate change across the curriculum. Teaching climate change education is not just a job for the scientists and geographers or an invitation to turn all teachers into climate scientists. It is a question equally of science and society, imagination and emotion, relationships and responsibility.

Second, we can mobilise schools as hubs of solidarity and action at the heart of our communities at local and national level. We create a programme of Great Transition dialogues in schools, where students are supported to work with their community to create ripples for real change in their lives and the lives of their families and communities. Such a programme would wake the sleeping giant of the education system to help it take a leading role in organising hope at the heart of our communities; and in so doing, would help students bridge the gap between ideals and reality.

The times demand an education strategy that helps students to talk together, as citizens, about the real-world non-trivial social, economic and political challenges of transitioning away from our dependence on cheap fossil energy, global supply chains and industrial agriculture. If we do not explore these issues in schools, if we don't see schools as spaces to work through these questions, and to build friendship and resilience within and despite them, then we are going to see these issues play out on the streets, as we already are. It will be too late for education to play its role when conflict starts. Conflict does not have to happen – we still have time, we have huge resources, we have thirty years of innovation, expertise and energy, massive global networks to draw upon, and the joy, creativity and energy that comes from working towards better futures.

Our job as educators, in other words, is to let go of wishful thinking and start the serious business of organising hope.

I

Thankyou for the invitation to speak today. I'm honoured to be asked and particularly happy to be here because I know this is a community of educators who are deeply concerned with the question of educational and social inequalities, and with the role of education in sustaining democracy.

Climate change goes to the heart of both of these issues. Living on a warming planet is a threat multiplier – it hits the weakest hardest, intensifies historic inequalities and is fuelled by excess wealth. Climate Change also brings threats to democracy – from all sides – as fossil fuel lobbyists outnumber delegates at UN conventions, as climate activists question democratic processes as being too slow and cumbersome, as culture war warriors try to make it a dividing line between communities.

I take my title – organising hope, from the subtitle of Ana Dinerstein's book on social movements in Latin America – and from Ernst Bloch's philosophy that underpins it. It captures the critical distinction that we need to make as we explore the relationship between schools and climate change. Namely, between **hope** – understood as an intentional, learned belief in the possibility of making a better world, a hope that is not guaranteed and that is only achieved by getting involved in trying to make it despite knowing that it will be difficult - and **wishful thinking** - the assumption that everything will all turn out fine in the end because we have technology and other people are on the case

My argument, tonight, is that schools have a central and critical role to play in organising hope not wishful thinking. I argue that the process of learning hope requires more than 'teaching the science', it requires us to imagine a significant, civilisational shift to new ways of living that have not yet been invented. This is a shift that will require all of our talents – our imagination, our empathy, our critical analytic skills, our capacity for invention. It is a shift that will demand the use of our hearts and our hands, as well as our heads. And it will urgently require schools to fulfil their potential as sites for democratic dialogue and creative invention at the heart of their communities.

At a time when students, international agencies and politicians are beginning to make the case for climate education in schools around the world - I will, I hope, honour Caroline Benn's campaigning tradition by concluding with some suggestions of where we might most effectively seek to intervene in the current political debate.

I – Feeling a changing climate in our bones

But first – the work of schools on a warming planet cannot be driven by what Kessel and Burke call 'terror management' – namely, the projection onto young people of our own anxieties and concerns. We have been doing that for too long and the consequences are becoming clear. A university of Bath survey of 10,000 young people around the world, for example, suggested that

- *Nearly 60% of young people approached said they felt very worried or extremely worried.*
- *More than 45% of those questioned said feelings about the climate affected their daily lives.*

- *Three-quarters said they thought the future was frightening.*
- *Over half (56%) say they think humanity is doomed.*
- *One 16-year-old said: "It's different for young people - for us, the destruction of the planet is personal." (https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3918955))*

Instead, our job is to work out how to have an informed and generative conversation with students about the situation and how we might create meaningful pathways to better futures. Our job, in other words, is to show them how it is possible to organise hope.

This means, first of all, that we need to recognise and deal with our own emotions in this area.

So – I'd like to begin by inviting you now to just shut your eyes for a second and think about when you came to realise, in your bones, in your body, that the climate is already changing - not in the future; not in the abstract, but now. And what emotions did you feel?

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For me – the moment I felt climate change deeply in my bones rather than as an abstract idea, was in 2019. This picture [slide image] is a map of the little area of the peak district that I grew up in for a while and which holds my heart. Just over here is another little town where an old boyfield of mine used to live. It is a sleepy little town, an everyday Peak District village.

Suddenly, in 2019, this sleepy little village in the middle of the hills in Northern England was in the news. After a period of intense rain, the reservoir above the town – Whaley Bridge - was threatening to collapse. Thousands of families were evacuated from their homes overnight and moved into temporary shelters, fear on their faces, grabbing what belongings they could.

This was the moment, for me, when I really confronted the reality of climate change – not as an abstract global phenomenon that we could plan for, out-think and out-smart, but as **patterns of extreme weather that will seek out vulnerabilities** - places where you are not well defended, structures and situations that are poorly maintained or designed, or where people and places suffer from lack of investment - and open them up. This was the moment I realised that the effects of a heating world come not in reliable patterns or predictions, but from angles you don't expect – wherever you have weaknesses - in this case, from floodwaters above the town, in the heart of the Peak District, an everyday place where my old boyfriend used to live.

You may have realised the same witnessing the events in Vancouver this last year as heat bombs pushed the most vulnerable people to cooling centres, wildfires wiped out ancient forests, apocalyptic floods and landslides cut off a major city in a western industrial country overnight.

You may have felt it if you live in Somerset or Doncaster or Carlisle or Tewkesbury or any of the places that have dealt with floods, or in any of the rural communities where trees were downed in storms cutting you off from electricity, essential shops and services, or anywhere on the coast where the cliffs are getting steadily closer to your homes and schools.

You may have felt it watching the levees break in Hurricane Katrina, seeing the radical racial inequalities in that city play out, intensified by the extreme weathers - and in the years since, watching the land sink into the sea in Louisiana as the sea level rises and the land drops

You may have felt it when you realised the coral reefs around your fantasy honeymoon island were now all bleached out; when you saw the wild places you visited while backpacking as a student now covered in plastic waste; or when you realised your kid's first chance to learn to ski was likely to be on fake snow.

You may have felt it, when you heard that in 2020 there were 22 climate related catastrophes in the US which topped $1bn each in insurance costs.

You may have felt it as you noticed, simply, that there are no insects on car windows in this country in summer any more.

The climate and ecological disaster is not a future problem. This is a situation we are living in now and it is getting worse.

This recognition generates a whole load of uncomfortable feelings – fear, anxiety, anger, frustration, apathy, resignation… you name it, it's there. Our challenge as educators is to work out how we respond to these emotions and how we use them productively. We could project our fears onto others. We could find other things to think about and distract ourselves. We could blame other people.

Or - we can confront what is happening and recognise that there is a significant amount we can do as educators – both in the short term and the long term – to reverse or reduce the impact of these trends, to regenerate our land and to create viable and sustainable futures. This is what I'm going to suggest tonight.

II – Recognising wishful thinking

To do this, however, we need to recognise the difference between hope and wishful thinking . As David Orr, the great environmental educator and democrat said: '*There are legitimate grounds for hope in hard times, but not one speck of ground for wishful thinking of any kind*'

Indeed, wishful thinking is what has got us into the mess we're in at the moment.

One way of distinguishing between wishful thinking and the sort of radical hope we need right now, is to think about what happened *between the moment when we first heard about*

climate change, and the moment when we realised that this might be something we needed to really take some personal responsibility for.

For many of us this will have been many many years ago. The first US president to be told about global warming was Lyndon B Johnson. The basic science of global warming was pretty much settled over 150 years ago.

Let's just each take a moment to think about where you were when you first heard about climate change? How long ago was it? What has happened between now and then?

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So – I'll tell you my own story of wishful thinking – as I'm no stranger to this

My first conscious memory of hearing the phrase 'climate change' came in 1989, I was in my last year at school, hanging out with a group of friends around the back of some bike sheds in winter, smoking and listening to the Stone Roses, at the height of the Manchester indie scene. A friend of mine – very cool, black hair, red lipstick, doc martins, turned to me and said 'climate change sounds OK - sink Kent and we all get warmer' – as a proud northerners not averse to better summers, we all laughed and went back to smoking our red marlboros.

Gradually, like most people, I became aware that there was a problem more serious than this, but I assumed that someone else was taking care of it and my job was to crack on with the other battles that seemed more pressing. Twenty years after that first mention of climate change, in 2009, I started a big project for the UK Department for Education looking at long term futures and at this point thinking about what we then called 'the environment' became unavoidable. Indeed, by then it was more than clear what was happening, that humans were responsible and that something pretty major needed to be done, quickly. In 2011, on the back of that project, I even wrote that adults needed to act now - otherwise: *' A significant disruption…may come [from young people] during the next decade … as anger over the implications of adult neglect to prevent climate chaos intensifies' (Facer 2011, 39)*

Even while writing that, however, I assumed that UN negotiations would keep increases in temperature down to 2 degrees above pre-industrial levels. I became a bit more diligent in my recycling, shifted my pension to fossil-free-funds, and began to explore how environmental issues connected with my primary areas of research.

It was only in 2018 that I moved to Sweden to really try to focus for the first time on the implications of climate change for education. I started a new role at Uppsala University, where a programme in Climate Change Leadership was being funded, and where some of the most outspoken climate scientists were making the case that government policies and market forces were not moving far and fast enough. This was around the time that a young Swedish schoolgirl was starting her protest in a yellow raincoat outside the parliament building in Stockholm. I arrived in Sweden, keen to work out what role education could play in addressing climate change full on and asked these climate scientists: OK – so now

everyone is finally beginning to agree that it is real, and it's our responsibility, what do we do? How do we make the changes we need?

And the response from the climate scientists and specialists who had been involved in the UN process for years, was simple and clear: *Decarbonise society now, stop digging up fossil fuels and get ourselves off the use of coal, oil, gas; restore natural environments, preserve the peatbogs, defend the forests and the oceans, stop the glaciers and permafrost from melting; work out how to stop building so much (concrete is bad) and figure out how to reduce consumption – in particular in rich countries. It's really clear, really simple – and we've been saying it for 30 years.*

OK, then, I said, that sounds like a clear agenda – how do we do that? Their response – and this was what floored me, was:

You're the social scientist – that's your job.

They went further:

We've been working on making the case that we have to do it. We've been fighting climate change deniers, we've been working piece by piece through the evidence, meticulously documenting that yes, it is human-caused and yes, it is serious and yes we need to act quickly. But the job of working out what life looks like when we decarbonise a society, when we shift the basis of our energy supply from oil, coal and gas; when we stop destroying and start regenerating natural environments – is still to be done. There is no template.

And at that point, I realised that oil and gas and coal interests have been hugely successful over the last 30 years, in fostering the wishful thinking that most of us have been engaging in - where we assume someone else is on the job or that something will come along to fix this – and in diverting our energy away from the critical question we should have been working on over all that time – which is:

How do we get our global civilisation off fossil fuels, how do we restore and protect natural environments and how do we do it in a way that is fair?

Today the majority of people understand broadly that climate change is an issue – that little schoolgirl is now one of the leaders of a global movement - but there is in fact very little to no understanding about what that actually means for our highly industrialised, consumer oriented and energy-intensive way of life in industrialised countries. *Wishful thinking still prevails*.

One of my Masters students last year, for example, studied GCSE students' awareness of the issue and found that the majority of students thought that tackling plastic waste was the main problem. One of my Swedish colleagues, two years ago, talked of how a student in her Sustainability class asked to be allowed to leave early to fly to Stockholm to get to the Black Friday sales. A postgraduate student of mine was surprised to discover that just one of the 8

flights she took to the west coast of America each year to see her boyfriend was the equivalent of 12 years of her very diligent recycling.

In other words – because so much of the research and energy has gone into proving that climate change is, in fact, a thing and that yes, we are responsible, we are now in a situation where there is in fact little wider public understanding of what the substantial change looks like that we might need to make, as individuals and as societies to prevent a massively warming world. Indeed, we don't really know what, in the the words of the IPCC 1.5 Degree Report, the '*rapid, far-reaching and unprecedented changes'* that are needed *'in all aspects of society'* will actually look like.

We have had, in other years, 30 years of wishful thinking

This means that we are now in a situation where there is no public consent (yet) for the sorts of significant changes needed to shift us away from reliance on fossil fuels. We are, however, at a tipping point. The conversation is beginning to shift to how we do this.

It is pretty clear what is required now, in the UK:

- Reduce our emissions 10-15% year on year.
- Stop the supply of fossil fuels (a fossil fuel non proliferation treaty is now circulating to this effect). We need to keep our own fossil fuels in the ground, now.
- Strengthen decentralised, community based energy supplies from renewable sources
- Decarbonise the housing stock in the UK, and insulate to reduce energy losses – create warm, dry homes.
- Shift subsidies and tax breaks that currently (still) support fossil fuels to renewable energy (estimated $500bn per year in 2019)
- Make public transport affordable and practical for everyone, everywhere – and make cities car free.
- Shift to regenerative agriculture, localised food systems and mainly plant-based diets
- Support indigenous communities defending land and water and biodiversity around the world.
- Cut the discretionary consumption of the richest in the world – that's us.
- Become growth agnostic – and focus on wellbeing.
- Support the transition of those in carbon intensive employment to green jobs and skills.

How to achieve all of this is the conversation we need to be having right now with our students.

IV – Resisting the last attempt to keep wishful thinking alive

However, there are two new arguments that are seeking to prevent that conversation. Two arguments that risk keeping us in the land of wishful thinking.

1. **First – the idea that everything will be fine if we aim for 'net zero' by 2050**. The common joke amongst climate scientists is that there are only two problems with this argument – first, 'net zero' (which assumes that you can keep using fossil fuels as long as you have 'offsets' to absorb their equivalent carbon dioxide) and second 'by 2050' (which implies that there is a long term deadline rather than a short term imperative).

   To be clear, net zero by 2050 basically says - don't worry, we can carry on as we have been with a few limits, because we have magical technologies called carbon capture and removal which will suck everything out of the air and make it all go away. This gives rise to the sort of wishful thinking that allows the UK government to think that preventing global warming and investing £1bn in a new natural gas project in Mozambique[1] and a new oil field in the Hebrides is not double-think[2]. Net zero is the sort of thinking that allows companies to be set up to enable people to offset the 'unavoidable carbon costs' (I quote) of megayacht holidays[3]. Net Zero by 2050 is like an alcoholic saying – don't worry, I'll keep drinking until 2049, and then I will use magic liver-saving tablets - that don't yet exist - to counteract all the problems of me keeping drinking. Instead of just giving up drinking….

   This is wishful thinking of the highest order. It allows us to continue living in the fantasy bubble that we can keep going as we have been doing. It ignores the fact that if we pull our remaining fossil fuel reserves out of the ground and use them, we have blown our chances of keeping the earth cool enough to be liveable for vast swathes of the global population.

1. The second line that sustains wishful thinking is – **it's too hard, it'll be too expensive, and it's too late, so we may as well just carry on as we are, (in the end, its only other people somewhere else that will be harmed).** This argument suggests that there is no difference between 3 degrees of additional warming (which is camels in the arctic time) and 1.5 degrees (which is what is still possible and which keeps a lot more coastal communities still alive). It also implies that there is a safe haven for us that we can retreat to while others pay the price (which there isn't). There is still a lot to play for here and it is not too late to tip the balance towards 1.5 degrees instead of an unliveable 3 degrees of heating.

1 https://news.sky.com/story/climate-change-uks-1bn-support-for-mozambique-gas-project-assessed-pollution-against-20c-warming-not-1-50c-12440917
2 https://www.bbc.co.uk/news/uk-scotland-57762927
3 https://yachtcarbonoffset.com/

Both of these arguments – the fantasy of net zero with no social changes and the 'it's too late, so we'll just carry on' are what Stanley Cohen called a form of 'implicatory denial' – recognising the facts, but denying the consequences.

In other words, they encourage us, again, to avoid the simple question that we've been avoiding for 30 years – which I will state again is:

How do we get ourselves off fossil fuels quickly, how do we restore and protect natural environments quickly, and how do we do this in a way that is fair?

V – Three steps to turn from wishful thinking to hope

Step 1: Give up on business as usual

The first step in organising hope is, then, to give up on wishful thinking and recognise that hope does not lie in business as usual. Indeed, it is a moment to recognise the failure of business as usual. A failure that we can see in the numbers from NASA that tell us that half the increase in CO2 has happened since 1980, and a quarter since 2000. Failure in the reports from glaciologists that the water is running off the Greenland iceshelf today at speeds not predicted until 2070. Failure in the fact that Indonesia is having to relocate its capital a thousand kilometers away from the coast. That in Louisiana communities are preparing to move from low lying areas. That the islanders on Vanuatu are having to try to rebuild their coral reefs while the waves flood their houses.

The first step towards hope rather than wishful thinking, then, comes through sadness, comes from recognising what we have lost and what we are losing if we continue to cling to wishful thinking that business as usual can carry on. Hope, in other words, comes on the other side of hopelessness.

But – and this is the good news - once we are on the other side we open ourselves up to a whole set of new possibilities. Once we let go of the old dream that we can just carry on as we are, we open up the possibility of creativity and energy and commitment to learn new ways of doing things.

Hope, in other words, lies in the yes that comes after the no.

As Vanessa Andreotti says – you don't learn to swim until the water is up to your backside. Well, the water is up there now – there's no avoiding it – and so it's time to learn to swim.

Step 2: Notice who else is already acting

The second stage in organising hope, once we stop just looking for solutions in old places, is to look around and to notice, with some relief, how many people, organisations, engineers, artists and others are already doing this. Our job isn't to work this out alone – but to join a movement that is already building.

Since I came back from Glasgow a couple of weeks ago, at various points I have to admit I regretted giving myself this title for the talk. And yet, as I've been writing it, the memory has come back to me of the huge beautiful and fierce energy of the movements of the People's Summit[4] and the climate coalition outside the conference halls of the COP process, the lined tired faces and the stubborn principled dedication of some of the scientists and negotiators working to keep negotiations alive, the crazy guy dressed as Darth Vader who stood outside the conference centre everyday singing to keep everyone's mood up, and the Indigenous elders and youth who came to glasgow to share their work and wisdom defending lands, biodiversity and water.

And as I have been writing and thinking of all of these people, they have reminded me that hope is not a product of scientific data, of confident prediction, but a bet, against the odds, that human beings and their capacity to invent, struggle, love and recreate our world, will come through - once we recognise with clear eyes the scale of what we are facing.

And here it is important to remember the other story of the last 30 years, is also that, despite the lack of investment, resistance and marginalisation, a huge amount of learning and experimentation has been going on.

We have developed new forms of clean energy that are massively cheaper than they were before, and behind the scenes, there have been some big gains in really practical but useful matters, such as how we deal with waste and make batteries that will hold energy for longer, reforest deserts and harness water from fog[5].

We know a lot more about how to deal with the psychological challenges of confronting the reality of a warming planet. We know a lot about the interconnections between colonialism and history, patriarchy and extractivism, and how we have got ourselves into this problem.

We have learned the deep complex beauty of the systems that sustain our biosphere – from the role of mosses in ancient forests in storing carbon to the work of sea grasses and kelp fields in our oceans.

We have begun to rediscover the deep wisdom of old land based knowledge that shows us forms of agriculture that are both efficient and sustainable, and that demonstrate how to care for land in ways that create abundance rather than depletion. And - from indigenous and activist communities who have been putting their bodies on the line for years – we have begun to re-learn how protest works, how democracy thrives and how the law can be mobilised for change. Not least in the growing Earth Rights movement, where we are seeing the rights of nature enshrined in law.

Our job as we look around and notice all of those already working in this area is not to 'help out' or rescue them - but to recognise that our work is their work, we are all concerned in the same struggle even at different levels of intensity.

[4] https://cop26coalition.org/peoples-summit/
[5] https://www.theverge.com/2018/6/8/17441496/fog-harvesting-water-scarcity-environment-crisis

Step 3: Work out our own distinctive contribution

The third act of organising hope – then, is to work out our own distinctive role in this bigger picture. Not everyone has to glue themselves to roads or to become climate scientists or foresters – or even to agree with them. Nor do we need to give up our jobs and lives and try to set up new schools in the hills. Rather, there is both an opportunity and a responsibility for each of us to act where we stand and where we can effect most change. After all, this is going to be a big change – what Joanna Macy and others have called the 'Great Transition'. It requires changing the energy and resource basis for a complex global civilisation and interrupting the exploitation and depletion of our common home. And because this transition is so huge, it is going to require action on many fronts and at many timescales, and using all of our talents.

For us as educators, acting where we stand is a powerful position. Climate change, after all, is fundamentally a collective educational problem – it invites us to ask whether we can learn, as a society, who we might be and what sort of world we might create, if we were no longer reliant on fossil fuels and the relentless extraction of natural resources for our existence. This is the inquiry that we need to start as a society, and schools are central to that project.

Far from feeling powerless, then, our challenge as educators is to recognise our capacity to bring this inquiry to life in our schools, our universities, our colleges and our practices of adult and informal education. We don't have the answers, nor should we claim to know in advance, what this new world might look like, but we can create the conditions in which we can work and learn, alongside our students, what it might take, in Hannah Arendt's terms, to 'renew our common world'.

V – What is the role of schools?

And so, finally, I get to the heart of the question for this evening. What can we do in schools? In summary, I want to suggest that we can mobilise our full curriculum as a resource for our students and mobilise the school's role as an ecological, economic and democratic actor in its community.

Drawing on the whole curriculum

We often hear the demand that our schools should 'teach the science'. I want to suggest that there is much more we can do and that teaching 'climate change' is not just a specialist subject. We can do this by looking at the four main accounts we have of the causes of climate change. We can think of this as the climate curriculum 'pyramid' that helps us to explore all the different ways in which climate change connects to curriculum areas.

From Facer, 2020 Beyond Business as Usual: Higher Education in the Era of Climate Change, Higher Education Policy Institute

The Science and Technology of Climate Change. First – and most familiar, of course, we need to support students to understand the scientific basis of climate change, its biophysical causes and the scientific, technical and engineering responses we might create to address these. This includes teaching the basics - such as the fact that all the carbon dioxide emitted today will be around for 300-1000 years – which is why offsetting is nonsense. It also means supporting students to invent and innovate, to harness their scientific and engineering creativity to create new ways of being in the world. We are in familiar STEM territory here, which is where we currently find most of climate change curriculum activities.

The Social, Economic and Political Aspects of Climate Change. The second area of curriculum that needs to be developed is supporting students to explore the social and economic foundations of climate change. Both climate scientists and social scientists point out that we cannot reach our climate goals just by replacing one energy system with another – it simply won't be enough. We also have to reduce demand for fossil fuels, which means supporting students to understand the economic drivers that are pushing high levels of resource extraction and environmental harm. This might mean, for example, drawing attention to facts such as that…

> *In 2019 UK subsidies for fossil fuels were to the tune of €12bn a year, compared with €8.3bn on renewables – mainly in the form of tax breaks and incentives to keep using fossil fuels for domestic heating and transport. Since 2015 Fossil Fuels have been subsidised globally by $3trn. (Guardian, July 2021)*

We might also want to help our students understand that climate change is a socially stratefied phenomenon, that maps onto economic inequalities. We might, for example, encourage students to engage with data such as these from Oxfam:

> *The richest 10 percent in the world accounted for over half (52 percent) of the emissions added to the atmosphere between 1990 and 2015. The richest one percent were responsible for 15 percent of emissions during this time – more than all the citizens of the EU and more than twice that of the poorest half of humanity (7 percent). Annual emissions grew by 60 percent between 1990 and 2015. The richest 5 percent were responsible for over a third (37 percent) of this growth. The total*

increase in emissions of the richest one percent was three times more than that of the poorest 50 percent. (Oxfam).

In other words, teaching climate change does not just mean teaching about carbon atoms, it is also a matter for social studies and citizenship, for debates about ethics, political choices and economic priorities.

The Cultural and Ontological aspects of Climate Change. Psychologists, indigenous scholars and historians also, however, invite us to recognise the role of specific worldviews, values and beliefs in producing climate change. They draw our attention to the problem of ontology - of our fundamental ideas of who we are and how we relate to each other and to the other beings on this planet. Our challenge here, they argue, is to support students to understand themselves as *part of* a lively planet, as a being alongside other beings from tardigrades to methane atoms trapped in permafrost to blue whales. This means becoming aware that the planet is not just a *context* for our existence, but a pre-existing space of beings alongside whom we are living. We need to create conditions for the planet to become intellectually and emotionally alive to us and our students again. Fortunately, this is something that all children have the capacity to recognise – it is not an awareness that is hard to teach, just easy to kill.

The Narrative and Imaginative aspects of Climate Change. And finally, we can also support students to explore the causes of climate change in the stories we tell and in the imagination we have available to us. This perspective sees climate change as the consequence of a civilisation that can imagine apocalypse but not economic and social change, that cannot create compelling visions of alternative stories around which it might organise itself. The educational challenge here is to create the imaginative and social spaces to confront the possibilities of collapse and disaster, transformation and change, and from these, to cultivate new stories of the world. We cannot continue to leave Hollywood in charge of our children's imagination – if it is only through films that they encounter a serious discussion of what happens if we fail, or how we might resolve the challenge, we are neglecting them and failing in our responsibilities to adequately support them to confront their fears and begin to work to address uncomfortable realities, transcend them, and imagine new worlds into being. The educational challenge here, is to recognise that the arts and imagination are essential to the response to climate change. As Audre Lorde argued "poetry is not a luxury, it is the sekelton architecture of our lives. It lays the foundations for a future of change, a bridge across our fears of what has never been before"

Teaching climate change education, then, is not just a job for the scientists or an invitation to turn all teachers into climate scientists. Instead – we need to recognise that it is a question equally of science and society, imagination and emotion, relationships and responsibility. All teachers, have a role to play in responding to this. This is a cross curricular question that demands all of our talents if we are to support our students to learn hope.

Schools as Catalysts for Local Action

This brings me to the second area in which schools role in climate change is becoming increasingly apparent - in acting as laboratories and catalysts for change in their communities.

As we know, many young people are struggling with the disconnect between the implications of the science that they are being taught about climate change and the perception of lack of action in the world around them. 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 are to be contributing to ecological damage through over-consumption, flights and other lifestyle choices (O'Neill et al, 2018). We are, if we are not careful, teaching anxiety, apathy and wishful thinking in the disconnect between curriculum and the day-to-day practices of our schools and communities. It is not enough to teach 'about' climate change. We have – in the familiar old phrase - to start walking the talk, and supporting our students to walk alongside us to create a path towards sustainable futures.

Fortunately, schools can do this. We have land and buildings, food supplies, purchasing strategies and transport policies, - all of which can be redesigned to significantly reduce carbon emissions and in so doing address equally important debates about children's access to quality food, healthy lifestyles and clean air. Indeed, the schools that are doing this work are showing significant reductions in their energy bills and improvements in their students' health. And we can do this as educators in ways that also influences our communities – and has huge ripple effects beyond our own walls.

Consider the example of the Community wealth building programmes – such as those in Cleveland and Preston, where schools, universities and councils work together to identify how to create sustainable livelihoods for their communities through localising economies. We have seen it happen and we have seen it work – addressing climate change, creating work, reducing poverty. Schools have the potential to trigger social tipping points.

Perhaps most important, however, the school has the potential to act as a site for students from all backgrounds to participate in democratic dialogue about how climate change, and transitions to more sustainable futures, might impact their communities, their families and their futures – and the role they might play in shaping these futures.

If I can dream for a moment – and dreaming of better futures, as I've said, is one of our obligations in the present moment. I might envisage the following:

> *A national programme of 'Great Transition' dialogues in schools, where students, drawing not only on science and geography, but economics and social sciences, arts and humanities, are supported to: explore the failures and the successes in our progress towards sustainable societies to date, and the causes of these; understand how infrastructure, regulations, facilities, work, communities and lives can be developed to effect real changes; and collectively imagine, identify*

and experiment with creating pathways towards viable sustainable futures including the sorts of social innovation and infrastructure changes that might be required to achieve this.

Such a programme would draw in examples from the UK and around the world, of cities, organisations and communities that are already making such changes, and equip students with the knowledge that they are neither alone nor poorly equipped to advocate for and achieve social change. Again, schools are not alone in this process, they can draw from the huge range of groups – such as Transition Towns, Incredible Edible, Rapid Transition Alliance, People's Coalition, the Marshall plan for Middle America and others - who are already working to realise sustainable futures.

Such a programme would wake the sleeping giant of the education system to help it take a leading role in organising hope at the heart of their communities; and in so doing, would help students bridge the gap between ideals and reality.

VII – Current UK Government Climate Education Strategy

I want to finish, then, by turning to the government's current proposals for a 'sustainability and climate change strategy' and reflect on how far it meets these aspirations.

There are some positive changes we can welcome in the draft strategy. We might note with encouragement, that the agenda is oriented towards young people not merely as recipients of climate knowledge, but as active participants in caring for biodiversity and engaging in climate action in the world. We might enthusiastically welcome the attention to sustainability as part of all subject areas in FE skills training, and a commitment to free Green Skills training for adults. And we can welcome the commitment to ensure that all new build schools will be climate neutral in their operations by 2030, even if we might want to see a lot more in there on retrofitting, transport, food and land policies. We can take all of these as a relatively modest baseline from which we can take the permission to begin to create new programmes and carbon neutral, biodiverse and sustainable schools over the next decade. We can read it as an invitation to exceed expectations perhaps.

The curriculum recommendations, however, need a lot of work. They are dominated by an account of climate change as a scientific and technical problem. Young people's climate action is to be channelled, in the main, towards the relatively 'safe' terrain of nature conservancy and participation in nature – valuable in themselves but not the only form of student agency conceivable – where is social innovation, urban transformation and change? The arts and imagination are not mentioned. One paragraph in the draft strategy, is worth particular attention for the potentially deadening effect it may have on the sorts of proposals I have outlined:

[i]n climate education there may be relevant political issues and partisan political views, for example on social and economic reform, that should be handled in line with schools legal duties on political impartiality. Importantly, whilst schools should support pupil's [sic] interest in climate change and tackling both its causes and effects, it would not be appropriate to encourage pupils to join specific campaigning groups or engage in specific political activity, such as protests

While this paragraph helpfully supports teachers to be confident in teaching human-caused climate change without having to present spurious 'balance' and so offers a serious step forward from the current curriculum, it does potentially cause other problems. While no one would challenge the idea that schools should be politically impartial it would be helpful to see the strategy support schools to create conditions where the different political and economic drivers of climate change can be discussed. It is not just 'science' but also 'social science' that offers facts and evidence. It would also be helpful - while recognising that it is not the job of schools to recruit students to join particular protest movements – for students to have access to more insights into how they can influence change and achieve progress towards sustainable futures. They need not only to understand their legitimate democratic right to protest, but also its potential limits in achieving significant change; they need access to other theories and practices of change from social innovation, to technological discoveries and legal challenges.

In seeking to strengthen the school's autonomy as a space for democratic and politically neutral domain for debate, we cannot simply ask teachers to limit their discussions to 'the science'. Enabling students to understand the social, political and economic choices at stake, to imagine futures that are sustainable and desirable and to understand different routes through which such decisions might be negotiated, should be at the heart not the margins of education strategy. Overall then, the reliance in the strategy document upon traditionally romantic ideas of nature as a retreat and haven for humans, as well as the reliance upon science and technology as the sole solution space for climate change, risks reproducing the sort of wishful thinking strategy that has characterised the last 30 years. Indeed, as it is currently framed, the draft strategy will allow a whole new generation of students and teachers to - and I'll use the IPCC language again – ignore the need for 'rapid, far reaching and unprecedented changes in all aspects of society'.

VIII – An Education that is adequate to the times

The times call for something more than this.

They call for an education policy that confronts climate change in a grown-up way, that recognises the complexity of decision-making and the difficult choices that will be required over the coming years.

The times demand an education strategy that helps students to talk together, as citizens, about the real world challenges of moving away from our dependence on cheap fossil energy, global supply chains and industrial agriculture. The times require a strategy that talks about how different groups of people might be differently affected - that some people may lose their jobs, others may need to get used to smaller houses, cars and fewer airmiles, that new ways of working and living might emerge – and that we have choices about how to handle any harms causes in this process. And the times require a policy that allows students to imagine what it might means to be human in a rich, living world in ways that do not produce environmental harm.

If we do not explore these issues in schools, if we don't see schools as spaces to work through these questions, and to build friendship and resilience within and despite them, then we are going to see these issues play out on the streets - as we already are. It will be too late for education to play its role when conflict starts. Conflict does not have to happen – we still have time, we have huge resources, we have thirty years of innovation, expertise and energy, massive global networks to draw upon, and the joy, creativity and energy that comes from working towards better futures.

We need to ensure that this draft strategy is developed in a way that recognises the scale of what we are up against and that strengthens our collective capacity to respond to the challenge. The consultation is open now.

Above all, though, we need to let go the idea that we are educating our students for business as usual and start creating the education of the imagination, the intellect and the spirit – the education of the head, heart and hands - that our students will need for a Great Transition to more sustainable societies. Our job, in other words, is to let go of wishful thinking and start the serious business of organising hope.

Thank you for listening.