Chapter Twelve: Taking It To The Streets - A New Era Of Activism

My three year discovery of people-powered innovation had begun in the United States at the South-By-South-West festival, where former Vice-President Joe Biden spoke passionately of the need to bring together the collective intelligence of the global medical community (including informed citizens) to bring an end to the scourge of cancer. Along the way, I'd personally faced an unwelcome recurrence of the disease. And my research ended in Australia, when a training tour I was running was cut short as the During Corona world became a little clearer. International travel - and organisations - had begun shutting down, and my immediate challenge was simply getting home while I still could. The journey back took me through the normally bustling cities of Melbourne and Sydney, through Abu Dhabi's emptying airport, and ended in an eerily desolate Manchester Airport baggage hall. By the time I turned the key to my home in North Yorkshire - a day before the UK belatedly locked down - it occurred to me that Biden's intimate knowledge of medical research was about to become a really significant strength in his presidential job application.

Towards the end of my travels, however, a further realisation slowly dawned on me. I had visited deeply impressive organisations, talked with leaders who had real vision, and was inspired by the young people who will be tomorrow's innovators, fixing our planet. Maybe I should have spotted it sooner, but there it was, sitting waiting for me when I returned home: the eight qualities that define innovative organisations (Trust, Transparency, Engagement, Equity, Autonomy, Agency, Mastery, Meaning) have either been in decline, or lost, from civic society in recent years. Put another way: many of us are drawn toward them in the organisations we work for, precisely *because* they're missing in our daily lives.

Consider the evidence. The loss of trust in our media and institutions. The crisis of disengagement in our schools and workplaces. The ever-widening social inequality. The deskilling of labour. The quest to 'take back control'. And - the most sobering - a plaintive search for identity and meaning, experienced by our children and young people. Sociologists and psychologists will probably maintain that this has been happening for a very long time. Or even that it was ever thus. Nevertheless, in the three years I'd spent seeking out mass ingenuity, the events I'd see on TV screens, wherever I happened to be, suggested that our long-established social contracts - policing by consent, the rule of law, free speech and legislative supremacy - were close to breaking point.

"No justice, no peace"

After the murder of George Floyd, a prolonged wave of street protests flared up all over the world. Coinciding with the coronavirus lockdowns, these large-scale protests provoked alarm and admiration. How strongly were people of all ages feeling that they'd risk their health, and that of their family, to make their voices heard? And, although the initial focus was justice for the Floyd family, in the three weeks following the tragedy, the direction of the anger widened. Statues of slave traders were pulled down, celebrities and politicians publicly condemned police brutality and institutionalised racism, cities changed street names to 'Black Lives Matter', Netflix removed comedies that contained culturally insensitive portrayals of discriminated-against minorities. It was as if the world had woken from a self-induced coma in the 1950s. Because of citizen journalism, if protesters were attacked by police, it was instantly shared around the world, thus confirming the underlying cause of the protest. Even in the bombed-out ruins of Idlib in Syria, young graffiti artists painted a tribute to George Floyd. There was a whiff of the summer of '68 about it.

The #blacklivesmatter campaign hit a raw nerve for black and ethnic minorities. Not only had police brutality been seen to target their community, coronavirus deaths were significantly higher in those communities. The early affirmations that we were 'all in this together' had been exposed - case numbers and mortality rates were unevenly distributed. If you came from a rural, middle-class, white community you were far less likely to be subject to police brutality *and* severe effects of Covid-19, than if you had darker skin, lived in densely populated city or were poor.

George Floyd's death at the hands of the Minneapolis police takes its place in a long line of black people being murdered by police officials. Previous injustices also sparked protests and calls for change. However, there was something different about this moment - things actually began to change. Speaking at a protest in Minneapolis, city council president, Lisa Bender, said: *"In Minneapolis and in cities across the US, it is clear that our system of policing is not keeping our communities safe. Our efforts at incremental reform have failed, period... Our commitment is to end policing as we know it and to recreate systems of public safety that actually keep us safe....We recognise that we don't have all the answers about what a police-free future looks like, but our community does. We're committing to engaging with every willing community member in the City of Minneapolis over the next year to identify what safety looks like for everyone."*

State governors, after decades of avoiding the issue, vowed to remove confederate monuments and statues of controversial figures. Cities all over Europe - even in New Zealand - followed suit.

Learning the lessons of the past

Even before the global howl of protest at racial inequality, the recent past had seen not just more, but *more effective* social movements seemingly springing up everywhere.
If it feels to you as though people are becoming more active, then you're right. Erica Chenowah of The Crowd Counting Consortium says, *"What we're seeing in the United States is symptomatic of what we see around the world……[Between] resistance against authoritarianism, colonial and foreign and military occupation … we've had more mass movements in this decade than in any decade since 1900."*

Four of the five largest demonstrations in US history took place during 2017-2018, including the March for Science and the Women's March (2017 & 2018). This latter came about in protest at Donald Trump's treatment of women (made graphic by the Access Hollywood tapes). Between 3 - 4 million women, not just in the US but around the world, demonstrated on the day after Trump's inauguration. Together with the #MeToo movement - a global response to the abuse revelations involving Hollywood mogul Harvey Weinstein (and others)- the impact upon social norms has been revelatory. There are few countries where women have not spoken out on sexual harassment. Corporations have been shaken, celebrities, previously thought-of as 'untouchable' have been exposed, and legislation introduced. It may be that we'll look back on the power of these two movements as the moment when half the planet's population began to be treated equally, and people of colour we given hope that change could indeed come.

March for Life and #MeToo will also be viewed as models for future social movements, so expertly have they been organised. Rather than protest movements operating on a kind of Groundhog Day principle, whereby the mistakes of the past are recreated through a failure of collective memory, the increasing sophistication of networking, and the factors discussed throughout this book, have led to activism that works.

Take the biggest of global issues: the looming environmental catastrophe. No-one would have predicted that a shy, fifteen year-old Swedish schoolkid with Aspergers Syndrome would spark a global movement of young people striking from school in protest at governmental complacency in response to the existential threat of climate change. But that's exactly what Greta Thunberg achieved. In August 2018, no-one took much notice of the somewhat lonely teenager sitting outside the Swedish parliament, every Friday. But within a few months, she had inspired schoolchildren in major cities all over the world, and become Time magazine's 2019 Person Of The Year. Predictably, as this softly spoken but completely unafraid and uncompromising activist gained global media attention, climate deniers spurned the opportunity to present the evidence against climate change (clue: there is none). Instead they chose to patronise a teenager who simply said what she believed.

Such patronage, however, couldn't be marshalled against the leaders of *Extinction Rebellion*. Formed by about 100 senior academics in May 2018, sporadic protests were followed by ten days of civil disobedience that brought London to a standstill in April 2019. Media images of elderly, articulate, middle-class, protesters, glued to buildings, stripping off in the public gallery of the House of Commons, or sitting on top of trains, clearly flummoxed the government. The UK's environmental minister, Michael Gove, was forced to admit that he needed to do much more.

Eco-warriors are too often dismissed as the coordinators of short-lived, and ultimately doomed, stunts. This was exactly the characterisation of the Occupy movement that took over parts of major cities around the world, during 2011. Although much smaller now, it's wrong to suggest the Occupy movement fizzled out, leaving no discernible legacy. For one thing, Extinction Rebellion's 2019 protests learned from Occupy's mistakes in two critical areas: First, they didn't 'dig in' for a long-haul encampment in one chosen location, as Occupy had done. Their agility in moving around London may have irritated London commuters, but it also made them elusive and therefore hard to stop. Second, whereas Occupy often stubbornly refused to articulate specific aims, ER could not have been clearer in their demands of governments globally:

- Tell the truth - by declaring a climate and ecological emergency
- Act now - to halt biodiversity loss and reduce greenhouse gas emissions to net zero by 2025
- Beyond politics - commission and be led by the decision of a Citizens' Assembly on climate and ecological justice.

And it worked. From April 15th 2019, ten days of nonviolent resistance resulted in over 1000 arrests, blanket media coverage, synchronised protests around the world. Within 10 days 27 countries had seen copycat protests. The movement was even endorsed by the appearance of a Banksy mural (A child tending a plant next to the message "From this moment despair ends and tactics begin"). Just days after the closing ceremony in Hyde Park, London, the UK government had passed a motion declaring a 'climate emergency' - an action consistently demanded for years, but considered unrealistic - and governments around the world were revising targets and promising urgent actions.

Remember that the three forms of people-powered innovation mentioned in Section One include advocating for new products or services (like a new model of policing or public consultation). So, it's to be expected that the strategies and organisational techniques deployed by user innovators and peer producers, would also be adopted by social movements. In short, they just got a lot smarter.

Facilitate, don't assimilate

Just as the tools of people-powered innovation apply to social activism, the choices for'producers' (in this case governments and industry alliances) are the same: work with them, ignore them, or try to eradicate them. When the Organization of the Petroleum Exporting Countries (OPEC - the powerful group of oil producing nations) said, in July 2019, that climate activists like Greta Thunberg were "perhaps the greatest threat to our industry going forward,'' it seemed to be a recognition that this generation of young people were not going to be seen and not heard. OPEC's Secretary General, Mohhamad Barkindo said that children of some colleagues at OPEC's headquarters '*are asking us about their future because... they see their peers on the streets campaigning against our industry'*, and that the mobilization against oil was beginning to "*dictate policies and corporate decisions, including investment in the industry.*" Thunberg tweeted her thanks to OPEC, describing it as 'our biggest compliment yet'. And then, along with a growing phalanx of young activist groups, set about organising the Global Climate Strike. On September 20th 2019, over six million people, in one hundred and fifty countries around the world, turned out in protest at the growing climate crisis - the largest public protest in history. Organised by a bunch of schoolchildren. Set aside the eloquence and power of the message these young people demonstrated. This was a hell of a feat of organisation.

It's hard to dismiss these campaigners as exceptions, not least because there are so many of them. I'm very fortunate in my working life to be able to meet students who are intent on making an impact. Remembering my adolescent self is embarrassing by comparison. My generation - the baby-boomers - is largely misled by the 'gen z' stereotype of narcissistic, screen addicted, self-serving young people. More and more, however, we seem to be getting the wake-up call that Mohhamad Barkindo got. And it should be a cause for great celebration. Their ability to organise through globally connected networks, their savvy use of social media, to wrong-foot opponents, their extensive depth of subject knowledge, is all going to come in handy when we finally accept that we've screwed up the environment, the economy, democracy, social care, health care, education, public housing...I could go on At a time when parliamentary democracy in the UK is a laughing stock, I honestly believe we could do less harm if we simply handed over the keys to the Houses of Commons, and said "it's all yours". We will see more reasons to be thankful for the current crop of young people in the penultimate chapter.

While there will always be a place for high-profile mass public demonstrations, the lessons learned from Occupy and others is that, increasingly, it's grass-roots actions that will win hearts and

minds. In a sense, it's activism made active. And the response to Covid-19 has given us a million illustrations.

Living with ambiguity

For all its horror, the Covid-19 pandemic has given us a much-needed sense of perspective. In the UK, the political discourse had been consumed for three years by Brexit. Now, it didn't seem to matter any more. Suddenly, we wanted to hear from experts. No more simplistic slogans - we looked to our politicians to give us the plain, unadorned, truth. We all came to terms with the sense of existential ambiguity normally only felt during periods of global warfare. Alongside that, however, was an introspection on some of the fundamental questions we now find ourselves asking ourselves: how do we wish to be governed? What does nationalism mean when our entire species is under attack? Where do we find the balance between personal liberty and our responsibility to look after each other?

Above all, during the early, darkest days of the pandemic, we desperately sought hope and compassion. I was no different to anyone else. Since I'd consciously chosen to understand organisations that commit to something bigger than themselves, and are places where ingenuity flourishes, I needed reassurance that their actions at the outset of the pandemic would exemplify both hope and compassion. I needn't have worried:

- BrewDog saw their revenue drop, overnight, by 70%, as pubs around the world were ordered to close. During the first week of lockdown, someone stole a huge truck filled with almost the entire stock of their most popular beer, Punk IPA. Alongside the other 130,000 equity punks, I received an email saying they were fighting for their survival. Despite that, they kept their workforce intact. The co-founders, Martin Dickie and James Watt, took no salary for 2020, and the leadership team took a significant pay cut. BrewDog switched part of their distillery from gin and whiskey to producing hand sanitisers, which they gave away to hospitals and care homes throughout Scotland. Their delivery vans switched from dropping off beers, to dropping off free school meals for children from disadvantaged communities. They created over a hundred virtual pubs where people could meet, play online pub quizzes, be inspired by Martin to brew their own beer, and enjoy live music and comedy. Their bars became 'BrewDog Drive-Thru', ensuring customers could make contactless purchases. Their online sales soared as their community rallied to support them.
- sparks & honey refocused their culture briefings to alert businesses, clients and the general public to the cultural implications of the pandemic. Remote daily briefings shared global

insights around the virus and consumerism, the economy, the environment, education and technology.

- XP school - in keeping with schools all over the world - had only days to switch their entire curriculum to a virtual school, while also being required to look after vulnerable children and children of key workers in the school.
- Pan Pantziarka's ReDo initiative suddenly found itself the centre of global interest in repurposing drugs, as more countries tested hydroxychloroquine as a preventative and treatment option. Pan urged for a balance between hope and caution - caution, because so many - including the US president - rushed to declare 'a winner' before there was proof of efficacy, but also hope, that ' *Pretty much all of the advantages that we have proposed for repurposing in oncology are coming to the fore in this pandemic. The case for repurposing is suddenly clear to many more people.'*
- Repowering opened more Energy Gardens in London, to meet the increased need for, and uncertainty over, fresh food availability.
- In early March 2020, as soon as the spread of the virus became clear, Patagonia closed its offices, stores, even its website, while committing to paying all of its employees in full. Unsurprisingly, it was one of the first global brands to do so.

A Twenty-First Century Renaissance?

These are just some of the inventive responses from organisations featured in this book, but they offer only the briefest of glimpses of a global outpouring of acts of ingenuity, compassion and activism. Even the most cynical of social observers couldn't help but be impressed. Inevitably perhaps, the panic-stricken requests for intensive care equipment weren't always well thought out. The UK Ventilator consortium of Siemens, Rolls Royce, Ford and Airbus was formed to produce 10,000 ventilators for intensive care units. Within a few weeks, they stood down as it was realised that putting patients on last-ditch ventilation was less effective than preventing the need for such ventilation. So attention switched to Continuous Positive Airways Pressure (CPAP) machines that could help people breathe before their condition worsens. The Mercedes[1] Formula One team worked with University College London to produce a more effective CPAP solution. Working flat out, *in fewer than a 100 hours*, they had gone from initial meeting to supplying the first of 10,000 machines commissioned by the UK government. All over the world, design and development processes that had hitherto been measured in years, were being truncated to days. In France, for example, Just One Giant Lab quickly became an international alliance of over 4,000 members (encompassing healthcare workers, designers, engineers, makers and technologists) working on dozens of Covid related challenges.

Those without the necessary technical expertise weren't excluded, either.

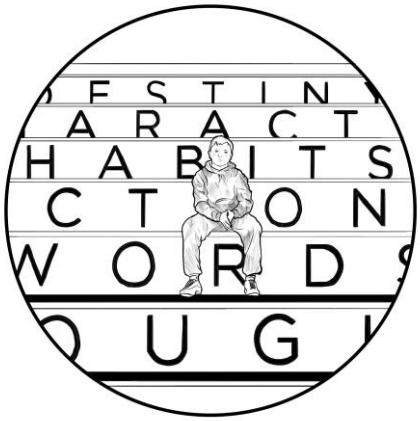
As impressive as these gestures are, the role of citizen scientists around the world played a vital role in creating data platforms that tracked the virus spread, They helped 'flatten the curve' of the initial outbreak, and will minimise the pandemic's mortality rate in the months and years to come. The UpCode Academy, in Singapore, tapped into the government's desire for data transparency by making a wealth of data available to all. Covid-19 SG tracks every known coronavirus case, where the infection originated, recovery times and clusters of infections, thus enabling residents to make informed decisions. Similarly, FoldIt is a simulation that enables gamers to identify proteins by playing video games. When the coronavirus outbreak occurred, almost 3,000 people patterned how the virus' proteins could be affected by new drug therapies.

These are impressive statements of what can be achieved through the power of us. The outpouring of ingenuity, all over the globe, was often seen in sharp contrast to some government's faltering attempts to gain control of the coronavirus. The US and UK administrations became overwhelmed as their initial complacency - in not taking the pandemic seriously during January/February 2020 - turned to barely disguised panic following the exponential spread of the virus. There were moments when it seemed as though there had been a shift in power: from ministers and spokespersons, to the private sector, researchers and grass-roots groups mentioned here. When the pandemic is finally brought under control, it will be seen as a landmark achievement, not in inter-governmental coordination (generally judged to be poor, or non-existent), but in harnessing people-powered innovation to solve the biggest of crises. Who knew we were capable of such a coordinated, urgent, deployment of the cognitive surplus that had been lying dormant for years, just waiting for a chance to save the world? Well, we did. We knew, deep-down, that we could determine our own futures, steered by our best selves. But that quiet internal voice had been drowned out among a cacophony of individualism, invective and self-interest. The big question remains, however: can we sustain this compassionate creativity once the field hospitals are closed down?

The economic and social consequences of Covid-19 will be with us for decades. Once we're through this, the world we knew will have gone, and we will have to rethink and redesign the world to come. It will be a task for the current generation, currently in high school and college, to figure it out. The baby boomer's responsibility is to ensure that they have the power of us behind them.

Key points:

- **We are witnessing new, and more effective, social movements redefining social, environmental and cultural norms, deploying the tools and techniques of mass ingenuity;**
- **During the coronavirus pandemic these grass-roots actions often outperformed governmental responses that were slow and unwieldy;**
- **Grassroots groups, citizen scientists, and peer producers are now better connected, have learned from previous attempts to leverage social reform. They are willing to lead communities in a post-Covid world. Given the scale of the anticipated economic depression, we may have no option but to work closely with them.**



Chapter Thirteen: The Future Is Theirs - Meet The Problem Solvers

Before we close, let's address the question that every parent grapples with, that politicians neglect, and that some of the people I interviewed are already finding answers to: how do we help young people become fearless agents of their own destinies? I confess that in my darker moments I find another way of putting it: how on earth can they *fix* the earth, so that they can even *have* a future on it? One of the reasons why Greta Thunberg attracted so much attention is her refusal to sugar-coat the pill. When she addressed the United Nations in October 2019, she got straight to the point:

"I should be back in school on the other side of the ocean. Yet you all come to me for hope? How dare you! You have stolen my dreams and my childhood with your empty words. And yet I'm one of the lucky ones. People are suffering. People are dying. Entire ecosystems are collapsing. We are in the beginning of a mass extinction. And all you can talk about is money and fairytales of eternal economic growth. How dare you!"

Greta Thunberg spoke an inconvenient truth. We are leaving young people with the stiffest of tasks, in the harshest of circumstances, and with the least available support. Despite all that, I have never been more hopeful for the future. Why? Because I have spent much of the past ten years in the company of this generation, and I never fail to be impressed, and moved, by the way they think, feel and act. It's the responsibility of any society to provide mentors and role models for them, and to give them the chance to develop the skills and experiences they'll need to remake the world beyond Covid.

So, this chapter will take you to schools from the two societies I know best (the United States and the United Kingdom). We'll meet the problem-solvers, their mentors and try to understand the context that has allowed them to flourish. We'll also look at how young people around the world have responded During Corona. For young people, the pandemic has essentially been a rehearsal for the slew of challenges coming their way. The great educator, Seymour Sarason used to say that

the best way to prepare young people for the life beyond school, is to put them in the life beyond school, as often as possible. So, let's start there.

School: New Roads School, Santa Monica, USA

Mentor: Luthern Williams

Mission: A private school with a public purpose

~~New Roads describes itself as 'a private school with a public purpose'~~. Situated in affluent Santa Monica, California - an oceanfront city being swallowed up by Los Angeles' urban sprawl - it could be forgiven for playing safe, and providing a cocooned environment where privileged children could get a traditional education. But New Roads was never intended to be 'safe'. Although it was born in 1995, it had, in the words of Head of School, Luthern Williams '*grown out of a 60s consciousness - a moral imperative for kids to be able to live and learn together, and hopefully this experience would also transform their parents, and would become a means of transforming society and free us from the crippling influence of racism and class'*.

To do this, the school had to mirror the world it wished to see, and reflect the metropolitan region it serves. So, although it's an independent school (and therefore a business) New Roads forgoes 28% of its total revenue to enable 40% of its families from the greater Los Angeles area to receive financial aid. This enables New Roads to recruit students 'regardless of financial wherewithal'. That policy alone makes New Roads pretty unique. But diversity doesn't end with student recruitment. The school has the most diverse teaching and administrative staff that I've ever encountered, and sends a powerful message to students: 'Be proud of who you are (and if you don't yet know who you are, you'll find it here). You can succeed, regardless of race, sexual orientation, ethnicity, ability, or class.' It's a message that makes the entertainment industry's super-rich send their kids to New Roads, alongside parents from economically disadvantaged districts like Compton, once labelled 'America's most dangerous city'. The school also has a high proportion of students with Autism or Aspergers, with almost all of them gaining acceptance to college, including prestigious Ivy League colleges.

All of this might make New Roads sound like a utopian community - and it is unashamedly idealistic - but it achieves great academic outcomes precisely *because* of its commitment to diversity. As Luthern puts it *'Diversity drives the curriculum'*. On the day I visited, Donald Trump had just quashed the DACA (Deferred Action for Childhood Arrivals) programme. Some students, clearly angry, wanted to see teaching suspended, so they could march in protest, while others were uneasy about the idea. The entire school stopped and had a discussion which resulted in a compromise being reached. To hear students talk so eloquently about politics, race and culture, in an

atmosphere infused with respect for others' opinions, is deeply impressive. It was also clear that with great freedom comes great responsibility. Luthern sets high expectations:

"We assume from the time they're in kindergarten that they are not empty vessels, they have thoughts, they have feelings, and they're to be taken seriously...as intellectual and social beings throughout their time here. We want our students to be global bridge-builders. So, we have to teach them to be mindful of their words and their actions."

It's too easy to see diversity through the lens of race or class. At New Roads, it's all-encompassing, including the curriculum and parents, in shaping the business of learning:

"We call ourselves an educational village, our parent's association is now called the parents village because the perception was that parents would think 'I'm responsible for my child, I'm not responsible for all these children'. I've tried to shift that - that we're all responsible for ALL these children, and it was always in the mission that parents as well as the children would learn".

One of very few African-American Principals in the independent school sector, Luthern himself is a living, breathing, exemplification of 'practise what you preach'. The first time I visited New Roads, the students presented a 'Dance In Action' project, portraying the early life of Malala Yusafzai, as she faced down the Taliban, in pursuit of an equal right to education. It was intensely moving and illustrative of the school's philosophy: if you want students to change the world, they have to understand themselves and how we are all connected.

School: Matthew Moss High School, Rochdale, UK
Mentor: Mark Moorhouse
Mission: Learning for life

Matthew Moss isn't a student - it's a truly remarkable high school in Rochdale, UK. It's fitting that the school is in Rochdale, because 180 years after the birth of the cooperative movement, Matthew Moss High School is keeping alive their principles of care for community, autonomy and independence, and a belief in education as a route to social equality. In 2014, the school leader, Mark Moorhouse, began an experiment that should have revolutionised formal learning. That it hasn't is due, partly to Mark's modesty, and partly to education's innate conservatism.

D6 is an experiment in self-determinism. What would happen if, for one day a week, you handed over the keys of a school to its students? What if they were learning, not from teachers, but from each other and from recently graduated students? Instead of students from the local community college being paid minimum wage to flip burgers on a Saturday, what if they were paid by Matthew Moss High School to be informal learning coaches? What if, instead of assigning coaches,

specialities and classrooms to students, you just put them together to figure it out for themselves? Would it be like a scene from *Lord Of The Flies*? Would anybody even show up (D6 is completely voluntary)?

After the first Saturday, Mark sent me an email, simply saying 'you've got to see this'. So I did. I was expecting to witness a scattering of students kicking a football around, or playing video games. What I saw was a river of learning. Young people were excitedly clustered around whiteboards, marker pens in hand, working on math equations, or moving fluidly between rooms as their learning needs changed and different coaches were sought for physics problems, or Spanish translations, or textual analysis. No-one seemed to be sitting quietly. No-one was giving a lecture. No-one was kicking a football around.

Wait a minute - what's going on here? When given a completely free reign, almost every student was working on *exam prep*! Didn't they get the text message about having a laugh with your mates? I was struggling to compute, so I asked Mark if I could speak to them. Hadn't the coaches felt the need to prepare some lectures ? Oh sure, they said. Some even launched into teacher-mode. But the students cut them off, saying *'we're OK with that, thanks, but what do you know about polynomials, because they're driving us mad?'* But, what if they asked you something outside your subject of expertise? *"We don't really have specialist knowledge, so that doesn't come up. But we know how to do exams - we've spent the past two years doing them. Besides, if we can't help, we've got friends down the hall who can."*

And that's how it came to resemble a river. The perpetual motion of just-in-time learning. The 'law of two feet' made real - if you're not getting anything out of it, move to another group. I was tearing up, just watching it.

Over a coffee, I asked Mark to explain how D6 works. Mark's blunt Yorkshire speaking patterns shouldn't fool you - this is a very deep thinker. He's a leader who knows that people - he makes no distinction between staff and students, labelling everyone a 'learner' - cannot be at their creative best when behaviour and relationships are dysfunctional. It was interesting to see that he also used the liquid metaphor. Explaining what made D6 special, his arm formed a 45 degree angle: *"Water can't flow uphill. When you ain't got a power gradient- a critical parent /adaptive child relationship- you open the door: between communities, between social strata, between weekends and weekdays, things that have been siloed in the workplace - what can't happen? When you go like that* (lowers his arm to the horizontal) *it becomes* ***your*** *place. You choose where you want to go to learn and*

connect with people who have no gradient, where peer-learning is the norm. The flow is just magnificent. It's like water."

In a performance-obsessed culture, D6 would count for nothing, if it weren't for the remarkable outcomes it gets. Having been evaluated over a number of years by researchers, the conclusions are consistent. Students regularly attending D6 will attain one grade higher, in every subject, in their terminal exams (GCSE & A-levels in the UK), than those who don't. Attend 17 or more sessions and that rises to a grade and a half, in every subject. And the picture is even more dramatic when it comes to students from poorer backgrounds. Using those in receipt of free school meals as the yardstick, Mark shared the impact:
"Globally, poorer students don't do as well as their better off peers. That's how it's always been. Poorer students attending D6 for 7 or more sessions will eliminate that gap. Learners attending 17 or more sessions ***double*** *the progress of their more advantaged peers. It's remarkable - all those inequalities of a quiet home to study in, trips to the museum, private tutoring, all those inequalities can be wiped out through a trusting and open initiative which costs this school one pound per learner, per hour, to run. That's the best pound per hour per learner we've EVER spent!*

Self-determined learning usually leads to student agency, and that sense of agency came to the fore during the early days of the pandemic. Matthew Moss students designed and 3D printed face shields for local surgeries when the UK was experiencing a desperate shortage of personal protective equipment. They began delivering them to grateful general practitioners, and soon orders were coming in from all over the UK.

D6 demonstrates that groups of young people, with minimal adult intervention, can do remarkable things. Sometimes all that is really needed is just to get out of their way.

School: Tri-County Early College (TCEC), Murphy, North Carolina, USA
Mentors: Alissa Cheek, Adam Haigler, Ben Owens

Murphy is a pretty, if sleepy, little town deep in the heart of Trumpland. As I drove in, I passed a huge billboard advertising "Guns and drugs". What could possibly go wrong with that combination? Social deprivation is high, aspirations low. Yet, when students graduate from this high school they get two certificates. One is their high school diploma. But 75% of them also get an Associate Degree . Under the 'Early College' scheme, established by Bill and Melinda Gates, TCEC students are able to part-complete their degree by spending half their time at the community

college next door. Most of these students are the first-in-family to attend college, and because they've already gained around two years of undergraduate credit, they'll complete their degree without a mountain of student debt. And let me just stress: this is *not* a school for 'gifted' students. Like the students at Matthew Moss High School, they arrive with slightly below average test scores. And yet they leave, not just well on the way to completing their degree studies, but as really good, empathetic, humans.

They're people like A.C., who set up a social enterprise to make senior citizens aware of the need for smoke alarms. The son of a firefighter, he'd seen how devastating a house fire could be, so went around the community fitting alarms, for free. A week after he installed one in an elderly lady's house, she suffered a catastrophic fire - but, thanks to A.C.'s alarm, managed to escape before inhaling the deadly smoke. A.C. literally saved her life. Another student had created a version of Lego with Braille lettering on the pegs, as a learning toy for visually impaired kids.

And then I met a truly remarkable student, Erin Manuel. At the age of eight, Erin watched with horror as the Haitian Earthquake hit that impoverished country. She felt compelled to help, so started selling her artwork at Farmers Markets, raising $17,000 in the process. In the intervening years she's made several trips to Haiti, and established a partnership between TCEC and a Haitian high school. But this still wasn't enough. TCEC were able to assess her social enterprise as a valid component of learning, and she helped to install solar panels in Haiti, through prototyping them at TCEC. Erin soon realised she could make more money by fundraising, rather than purely selling her artwork. So, she legally established a foundation and set about writing grant applications. When I interviewed her she'd just secured a $25,000 grant to assist her adopted school. Now, ask yourself: "What was I doing when I was 17?"

Like so many other organisations I'd visited, TCEC models the attributes it wishes to see in its users. It's part of the teacher-powered network in the U.S. so decision-making is distributed. As part of this process, Principal Alissa Cheek has devolved a lot of decisions For instance, teachers decide upon curriculum and budgets. Alissa even handed over the marketing of the school to the students, because they were tech-savvy and were also the best advocates of the learning. A typical day doesn't follow the normal path either. Students spend their time, either in fairly conventional lectures at the community college, or engaged in community-based projects, with each student having an adult mentor to work with.

Two of TCEC's senior teachers, Ben Owens and Adam Haigler, charted the school's development in their highly recommended book, *Open Up, Education!* On the day I visited, Ben Owens was

completing his final day as a teacher at TCEC (he now works as a consultant) - it was like a scene from *"Goodbye Mr Chips"* or *"Mr Holland's Opus"* . By the time Ben's farewell speech concluded with the line *"Y'all change the world - because I know you will"* there was not a dry eye in the house. This school is the real deal. Although North Carolina's high school graduation rates are improving, 14% of students still fail to complete their high school education. At TCEC, it's only 3%. With temporary portable boxes that pass for classrooms, what they've achieved here has been done on the smell of an oily rag. How had they done it?

As Ben dispensed celebratory cake, Adam explained a key element of their success: expert application of a 'competency-based approach'. With competency/mastery, students aren't able to move to the next level until they have demonstrated mastery. At TCEC, this is almost entirely demonstrated through projects that help the local community. Under this 'assessed when ready' scheme, students mirror the workplace by striving for mastery of particular concepts or skill sets. There are three levels:

1) In progress (mastery not yet demonstrated);
2) Mastery achieved ;
3) High Mastery (the student has taught another how to achieve mastery)

This 'everyone a teacher, everyone a student' ethos echoed what I'd heard at WD-40 Company and Matthew Moss. Ben explained how his previous career as an engineer at chemicals conglomerate DuPont shaped his approach to teaching:*"At DuPont, we consistently had difficulty finding the talent we needed in our manufacturing facilities all over the country. This told me that there was something fundamentally wrong with how we were educating young people"*

I asked to meet with a group of students. I suspected their success could be attributed to being given excessive amounts of homework. Not so, one student cheerfully explained, the school doesn't give out any homework:
"No, we give ourselves homework. If you need to prove mastery, you do what needs to be done. I give myself a lot of homework because of the goals I've set myself."

I asked another student to describe how this might be a more effective way of learning:
"If you just learn stuff, but don't have to do anything with it, you lose the knowledge. If mastery is on the line, you have to work much harder yourself to get a deeper understanding. To get high mastery, I have to figure out a way to explain it that's going to make sense to others. So, I have to step outside of my own way of thinking, and put myself in their shoes."

You share your work with the local community. What does that give you?
"It gives you more confidence. I don't know if you'd noticed, but we don't say "like" or 'um' much. Students from more traditional schools can't do that so much. Most of us students like to have the feedback of our community more. Because you get to see what they think of you and you get to see how you can achieve a bigger goal."

It's that 'bigger goal' that we keep losing sight of in education. A.C. had to learn a ton of physics and chemistry in order to save that woman's life. Erin had to learn how to apply for funds, in order to create her foundation. After having met them both, I came away with one overriding conviction: If you can build these curious, empathetic, creative, and brilliant communicators here, you can do it anywhere.

School: High Tech High Middle School, Chula Vista, USA
Mentors: Melissa Daniels, Larry Rosenstock

More traditional versions of school seem to cling to the 'seen, but not heard' credo - no talking in class, so-called 'silent corridors'. I'm absolutely convinced that we do our young people a disservice by tolerating this invisibility. And if you still need convincing, you need to talk to Life California.

That isn't an American Tourism initiative - it's the name of an 8th grade student at the High Tech High School in Chula Vista. I know it sounds like the kind of name dreamt up by central casting, but it was actually chosen for this bright, articulate charming African American adolescent by her parents. The 'Life' part is obvious when you meet her, and the family name isn't because her parents are Mr and Mrs California, but because *'my dad heard you could choose any name you liked, and he liked that one'*. Life's school is almost in Tijuana, Mexico, home to the busiest border crossing in the world. High Tech High famously believes in students doing real-world projects, and in maximising opportunities for students to speak. I first met Life when she was a student ambassador. As a ten-year old school tour guide, she told me about the school's ethos and why she chose to attend. I have rarely heard *any* human present ideas with such perception, warmth and humility, though she's by no means exceptional at the cluster of High Tech High Schools, founded and led by the CEO, Larry Rosenstock. HTH students have multiple opportunities to interact with adults (all 14 schools have an open door policy) and they regularly give talks and presentations. The then middle-school director, Melissa Daniels made a point of making sure I heard from a number of students, to allay any reservations that Life had been hand-picked to present. Nevertheless, I suspected that Life was articulate when she arrived in the maternity ward. So, when I met up with

her three years later, I asked if she was just naturally gifted at speaking, or was there something about the education she was getting?

"Before coming to this school, I don't know if I'd have had that opportunity to prove to myself that I had leadership potential. This school really cared about me. At other schools, it's just the goal to get students to pass exams. Here, they wanted to make sure that I grew and developed as a person, as well as a member of society."

Like all of you, I'm no different when it comes to talking to young people. The obvious question is "What do you want to be when you grow up?" In Life's case, it has been the same ambition for as long as she can remember:

"I want to be president"

"President of what, Life?"

"The United States."

"Great - how will you do that?"

"My preferred school is UCLA , for 4 years of political science, then to Harvard Law School - I'd like to become President of the Harvard Law Review. This is something that Barack Obama did. After I've been a lawyer, I'd like to run for political office. Originally, I wanted to become a Senator, but then I looked at the numbers who became President, and it was much smaller than the Governors who became President, So my big step would be to become Governor of California and then run for President."

So, as you can see, she has it all figured out. That this statement was made without a trace of arrogance tells you all you need to know about this remarkable person, as well as the remarkable mentors who have encouraged her to shoot for the moon. If you're reading this in 2040, and the Governor of California *isn't* called Life California, I owe you a beer.

School: XP School, Doncaster, UK
Mentors: Andy Sprakes, Gwyn ap Harri
Mission: Above all, compassion

The town of Doncaster lies in South Yorkshire. It forms part of the mining triangle of Barnsley, Doncaster and Rotherham - an area that, following the systematic dereliction of the mining industry by the Margaret Thatcher government in the 1980s, was 'forgotten'. If you've seen the films *Brassed Off* or *The Full Monty*, you'll have a pretty accurate picture. In 2016, Doncaster was judged to have some of the worst performing schools in the UK.

Proud Doncaster resident, Gwyn ap Harri, created an education technology company, based in the town, then restored the old cinema to be his family home. Faced with the prospect of not finding a

decent school for his kids to attend, he set about starting up a new school. He is the epitome of a start-up entrepreneur, and one whose journey touches on some familiar innovative environments. He was inspired to start up XP School after visiting High Tech High and speaking to students not unlike Life California. His model for establishing a new kind of school was found, not in education books, but in James Watt's guide to setting up BrewDog, *'Business for Punks'*. On one of several visits to XP, I talked to Gwyn about how he came to establish the school. He talks as he leads - sentences start, but often don't end. A new idea is impatiently pushing the previous one aside. A typical exchange:

'So, Gwyn, how does XP resemble a start-up?'

"I founded a software company. As it grew, I was advised to hire a project manager. One consultant arrived on his motorbike and threatened to ruin the company.... So, he didn't get hired... I just Googled 'Project Management'.... Researched agile project management. Scrums and all that rubbish..... Just build stuff. Prototype, iterate. Plan for 6 weeks, not 6 years. When I started this school, there was no reason to do it any other way. Spend an hour on something, you'll get it 80% right. To get it 90% right, you might have to spend 20 hours on it. Get the next 2 weeks really sharp, details, the longer you go beyond that the fuzzier you should be planning. People think we're a cult...hippies. We're not, we're punks."

XP is what a Brewdog school might look like. For example, following the Brewdog mantra, 'Cash Is King', Gwyn knew that they would need to factor in the 'extras' for XP students - like the compulsory outward bound trip up a mountain in Wales that marks the start of every student's career at XP - and made sure every other penny counted:

"We've not spent a penny on cover teachers (deputising for staff who are on leave). We're a crew, so we look after each other...We spend zero on recruitment...For the first 2 years, our accounts were done on a single google spreadsheet. Our teachers control their own schedules, because we want fewer teachers, teaching fewer numbers of kids, more of the time. If you base a decision on values and purpose, it's never wrong. It might not be the best way to do something, but it's never wrong. So, let's review, itierate, do it again. The hardest thing about this school is that there's nowhere to hide. Because everything is shared with each other. Don't do things for ego, but don't not do things out of fear. Everything can be fixed."

Because he'd never set up a school before, and it's a weighty responsibility, the safe thing for Gwyn and Andy Sprakes, his co-founder and executive principal, to have done, would have been to follow the template all schools essentially follow. But Gwyn firmly believes that if you do what you've always done, you'll get what you always got. So the school behaves like a start-up. But does the radical way in which the school operates feed through to its core business: the students? I had an opportunity to see for myself when I was invited to take part in one of their 'coming-of-age' rituals - the 'passage presentations'.

When students at XP move from one phase of their education to another they are required to present to their parents, friends and invited guests. Their presentation is meant to summarise what they have learned so far, to share their most challenging and rewarding moments, and to speculate on their future aspirations. For white working class boys, especially, it can be a daunting experience. Boys like Bobby. Bobby is a thirteen-year old boy on the autism spectrum. He's extremely bright, but has difficulties focussing on prolonged tasks. He was brutally honest in his self-assessment (*"to be honest, I don't have a hobby, nor many interests"*). His first exposure to the concept of 'crew', was that compulsory outward bound week in Wales:
"When we went camping, and were told we'd have to walk for six hours that day, I had a mental breakdown. (He wasn't being over-dramatic here. It was a traumatic experience for him) *"However, my crew helped me and I calmed down. Outward bound made me bond with my crew and understand how crew works."*

It was when he turned to his overall reflections that his watching mother seemed to be visibly moved: *"My teachers here have not only taught us STEM and Humanities, but how to be more compassionate to people. We've also learnt how to respect our community such as miners and how they helped the country run. When I first came to XP, I struggled to work in groups. Throughout my time at XP I have gotten better at dealing with people annoying me. I have an interest in science and IT, so I may make video games as a career in my later life - XP has helped me grow as a learner and a person"*

When Bobby had left the room, I asked his mother why she'd been so moved by his self assessment. She spoke about the previous schools he'd attended, then subsequently left, due to the school's inability to adapt to his autism:
"Bobby is how Bobby is because of people forcing him to do things he doesn't want to do. He did suffer a proper breakdown on the camping trip and I worried that XP would be another one to add to the list. But to see him stand up and do what he's just done.....well, this school is my lottery win."

It's impossible to meet young people like Bobby, and Erin, and Life, and A.C. and *not* believe that we'll be OK in their hands. Not least, because they represent an ingenuity, driven by social purpose, and a deep familiarity with technology that I can only marvel at. People like Will Stamp, a seventeen year-old I met at John Monash Science School in Melbourne, who'd hacked into NASA's telescopes so that he could find, not one, but three previously undiscovered stars, one of which - I'm not making this up - was 300 times the size of the earth. Or Shubham Jaglan, the young boy I played golf with in New Delhi (he was twelve at the time, and beat me by fifteen shots). Shubham

grew up in rural India, with nothing more than an old golf club, and an internet connection. With just this, entirely self-taught until he moved to Delhi, he modelled his swing on Tiger Woods, and became junior World Champion..

All of these encounters, however, happened in the Before Corona world. How, I wondered, would the so-called 'snowflake generation' cope with the psychological impact of a global pandemic? It was challenging enough for their parents and elders . During World War Two, we didn't expect children who were evacuated to be contributing to the war effort. So it would be unreasonable to have expectations of young people During Corona, would it not? Unreasonable or not, here's a sliver of what they did.

The problem-solvers take centre stage

The examples I'm about to give are not 'beautiful exceptions'. Every town has a bunch of young people like the ones I've featured, and every house has the potential to have one.

At the source of the pandemic in Wuhan, the Chinese government stopped all public transport. A group of young volunteer drivers self-organised a community fleet of vehicles to get medical workers from their home to work. In India, young people organised survival packages for 'daily wage workers' (the basics of rice, wheat, tea, soap) so that people literally existing from one day to the next, would be supported. Two New York City students set up 'Invisible Hands' a service to provide groceries, medicines and a friendly word (at a distance) to the elderly and vulnerable. They signed up over 5000 volunteers in a matter of days. In Kenya, Stephen Wamukota, from Bungoma County in Western Kenya, received a Presidential Order of Service Award for inventing a pedal-operated 'hands-free' machine. The machine makes communal use of soap and water, without touching any surfaces, possible and therefore safe. Stephen was nine years old.

Or there's Avi Schiffman, a 17 year-old who 'struggled' at high school in Washington State. In 2020, Avi won the much-coveted 'Webby Person Of The Year' award for best website, for his Covid-tracker site[1]. The site constantly updates in real-time and was considered so reliable that it became the epidemiologist's go-to reference point when identifying spikes or patterns. Not content with that, Avi built a 'protest tracker' site[2] which monitored global protests in the wake of the George Floyd protests. In an interview for the MIT Technology Review, Avi, describing his 'normal' life said:

[1] nCov2019.live
[2] 2020protest.com

"I'm not a really good student. No, really—I was a really bad student. I had a 1.7 GPA. I focused my time on programming-related stuff. In ceramics class the teacher would turn around and I was just working on my coronavirus site, which is what I was passionate about. I couldn't focus in any class. I'd stay up late working on programming—my attendance rate was 60%."

Avi was no more a terrible student than fishes are terrible tree-climbers. It's a condemnation of our education system that a young man like Avi has to go without sleep so that he can build the most used Covid-tracker on the entire worldwide web, and the exam system can't recognise his talent. In the same interview, Avi revealed his motivation and aspirations:

"A lot of adults have asked me why I haven't taken any deals for selling the site. And honestly, I don't want to. I can see why adults are against my decision. I just want to make really high-impact stuff. I could have made something really big and lived the rest of my life in the Bahamas. ...I sort of plan to go to college eventually, maybe? [Pause] I probably won't go to college. I'm working on more interesting things."

It's not about the money

We find it hard to believe that young people wouldn't want to make a ton of money from their labour, but that's our inadequacy, not theirs. Remember Ryan Junseo Hong, the Korean young man who built a similar tracker to Avi's? I contacted him to ask how the pandemic had affected his generation and to ask about his plans for a very uncertain future, In impeccable English, he replied:

"I think this COVID outbreak gave us an important lesson on how seriously we can be impacted by these disasters. For teenagers like me, I guess this COVID outbreak was the scariest thing we have ever witnessed with our eyes so far... I'm pretty sure it led us to think about these disasters more seriously and it will definitely change our perspective on these disasters. And our generation should really take advantage of this to deal with bigger challenges ahead. I would love to build a charitable organization to serve people, because throughout this journey of corona map live I found out that I was never happier than this in my entire life. I started helping people without expecting anything. I wouldn't have had the same feeling if I decided to monetize it. I learned that it was way more powerful than money."

Give them the keys, and get out of their way.

Key points:

I’ve met so many of these future entrepreneurs and innovators to be convinced that, whether adults or adolescents, if we want to nurture ingenuity in people, we have to focus upon certain ‘must-haves’:

- Self-determined learning (within clear limits);
- Making a culture of collaboration (teachers and students) a ‘non-negotiable’;
- Recasting students (and their parents) as user-innovators who will re-design learning;
- Clear and consistent protocols;
- Crews/Tribes, not departments (to develop a common language);
- A focus on personal mastery, finding strengths, not rectifying weaknesses ;
- A belief in entrepreneurship as a way of making the world a better place;
- Self-advocacy: curiosity is a means in itself, it has its own reason for being. We cannot be curious if we do not know each other and - especially - ourselves.