

Try not to gulp when you read the next sentence.

According to lobby group Leave Them Kids Alone, upwards of 3,500 UK schools are fingerprinting their students, with biometric equipment bought from two Department for Children, Schools and Families-approved suppliers.

Could there be a more frightening motif for our brave new world of order and control?

It's true that this equipment is, ostensibly, being used for computerised class registers and libraries, in order to ease the bureaucratic headache of many schools. True, too, that the Information Commissioner has issued guidelines that parental consent should be obtained, and records removed by a data-cleansing service when a child leaves the school. But that really is not the point.

The trend speaks volumes about our mechanised approach to our children in an education system created in the image of the Industrial Revolution and still maintained today, in service of keeping the cogs in the global economy turning. Perhaps it is time to update the old adage that a child is not a vessel waiting to be filled, but a lamp to be lit. In today's educational climate, perhaps we need to see children not simply as units to be processed and counted, but instead as future citizens to be empowered to address boldly the legacy of problems – environmental, social and economic – they will inevitably face as adults.

Although businesses today urgently need people who can cope with and contribute to the breathless rate of economic, technological and ecological change, Sir Ken Robinson, author of *Out Of Our Minds: Learning to be Creative*, thinks that schools are failing adequately to equip children with the qualities they need to do so.

'There is another crisis today in addition to the climate crisis,' he says. 'It's a crisis of human resources, and in particular a failure to tap the full potential of human creativity and imagination. There are major problems facing all organisations in recruiting and retaining people with creative abilities, powers of communication and adaptability. Although young people have these qualities in abundance, by the time they emerge from formal education many of them do not.'

The decline in divergent thinking

Revealing research shows that young people lose their ability to think in 'divergent or non-linear ways' as they get older. Divergent thinking is defined by the ability to generate many, or more complex or complicated, ideas from an original idea, and then to elaborate upon those ideas. It is a key component of creativity.

More than a decade ago, in their book *Breakpoint and Beyond: Mastering the Future Today*, George Land, a world-renowned general systems scientist, and Beth Jarman

ROBOTIC CHILDREN

Our conveyor-belt education system is geared towards the production of clones and parrots, not imaginative, creative and curious human beings. Is it any wonder our children are stressed and unhappy? **Nick Nettles** reports



recorded research on divergent thinking that they had carried out over a series of years.

Of 1,600 children, aged three to five, who were tested, 98 per cent showed they could think in divergent ways. By the time they were aged eight to 10, 32 per cent could think divergently. When the same test was applied to children aged 13 to 15 years old, only 10 per cent could think in this way. And when the test was used on 200,000 25-year-olds, only 2 per cent could think divergently.

The reason for this, according to Guy Claxton, professor of Learning Science at Bristol University and author of *What's the Point of School?* (published this month by Oneworld), is that school is – at worst – a protracted apprenticeship in passivity, uncritical thought and recapitulation.

'You can get good results by spoon-feeding, but you don't get creative, independent minds,' he says. 'There's no evidence that learning to solve simultaneous equations prepares you for the uncertainty and difficulty of real life. But we blunder on in the vain hope that somehow it will.'

We don't need no education

Indeed, if we are to believe the media reports of teenage gangs, binge-drinking, drug-taking and pregnancy, children have enough problems dealing with the present, let alone the harsh reality they may face in the future.

'Many young people today are exhibiting the signs of stress, which they act out in destructive and/or self-destructive ways,' says Claxton. 'People "do" stress when they don't feel they have the resources to meet the demands of an uncertain world; but instead of school helping youngsters to develop those resources, like a vicious circle they increasingly see education as yet another set of demands they have to meet.'

Clearly, to create leaders and managers to steer the business community in the right direction is not the only purpose of schools, but as Maurice Holt, emeritus professor of Education at the University of Colorado at Denver, says in his 2002 article, 'It's time to start the Slow School Movement', the purpose of education should essentially be about equipping children with the ability to act responsibly in a complex society.

Richard Gerver, an award-winning primary school headmaster at Grange Primary School, Derbyshire, agrees. 'We have to re-engage with the essential purpose of education and question its underlying moral imperative,' she

Open to examination

English pupils now face 70 standardised exams in their school career. This reflects a broader shift in our attitude to children. Today, we find it hard simply to let them be. We prefer to micromanage, monitor and measure everything they do, as though child-rearing were the same as product-development. Instead of setting them loose in the park, we enrol them in organised sports or herd them into entertainment complexes to play under the watchful eye of trained staff and CCTV cameras.

Just as targets warp priorities from the NHS to the police service, an exam-centric approach can push teachers to 'teach to the test' rather than promote real learning, imagination and problem-solving. To boost rankings, schools find ways to massage exam results; eventually, when the pressure for top marks becomes all-consuming, exams lose their currency. A-level grade inflation has made it so hard to distinguish between pupils that Imperial College recently launched its own entrance exam.

For pupils, exams are a blunt instrument. What they measure best is how good you are at sitting exams. The New Economy needs nimble-minded innovators who can think across disciplines and relish the challenge of learning throughout their lives. These are the people that will create the next Google, invent an alternative fuel or devise a plan to slay poverty in Africa. Making a fetish of exam scores encourages pupils to serve up oven-ready answers, to tick the box instead of thinking outside it.

True learning defies tests, targets and timetables. It is fluid, unpredictable and fiendishly hard to measure. It is also rich, potent and exhilarating. One way to bring that spirit into our classrooms is to accept that much of the best learning cannot be reduced to a number. As Einstein said: 'Not everything that can be counted counts, and not everything that counts can be counted.'

Across the Far East, states are trimming the academic workload, loosening up curricula to foster creative thinking and putting less emphasis on test scores. Says a former education minister of Singapore: 'If we stick only with the national exams as a means of (measuring children)... it is transparent and simple, but it will tend to

narrow our definition of talent, and it will tend to narrow our definition of success.'

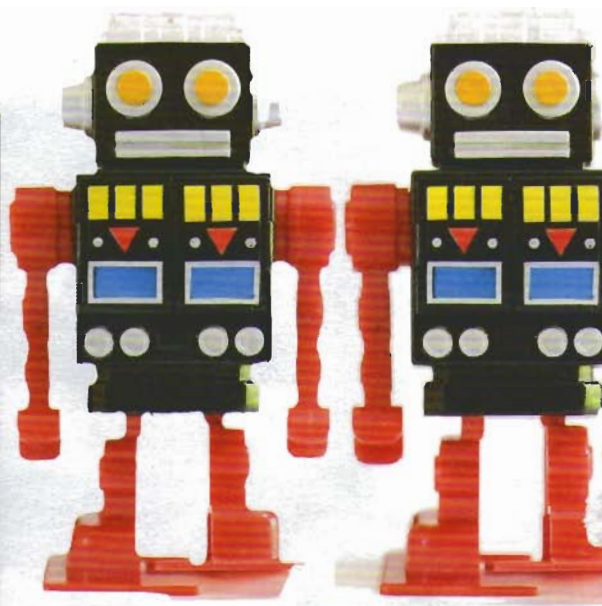
Finland has one of the highest university graduation rates in the world and a dynamic economy. Apart from finals, children sit no standardised exams. Schools use tests to track pupils' progress, but written reports take precedence over marks until secondary school. Finland shows its teachers the same trust: it trains them rigorously and then leaves them alone to get on with the job rather than forcing them to quantify their every move.

Perhaps the tide is starting to turn in Britain, too. Wales has already scrapped standardised exams for children aged 7 and made them optional for those of 11 and 14. Scotland also uses tests more sparingly. By 2009, English teens may take a third fewer exams in their final two years.

Many schools are now casting off the National Curriculum altogether. At St John's School and Community College, a state secondary in Marlborough, pupils spread a single theme across every subject at the same time. During the Going Places module, for instance, they might study velocity in maths, the environmental impact of airplanes in science and the travel writings of Paul Theroux in English. Testing is kept to a minimum, but the real revolution is that children take the reins. Teachers ensure a class covers key concepts but the pupils decide how to explore them, writing their own curriculum as they go.

Exams are not all bad – they focus minds and spur everyone to work harder, but they should not be the driving force in the classroom. We need an education system with the confidence to let learning happen without quantifying and structuring at every turn; to train teachers with Finnish rigour and leave them to it, and reinvent our schools so the exam is no longer an end in itself. The bottom line is that children learn best when they have the freedom to take chances, to unleash their curiosity, to take charge of their own learning.

Carl Honoré is a journalist and author of *Under Pressure: Rescuing our Children from the Culture of Hyper-Parenting* (HarperOne)



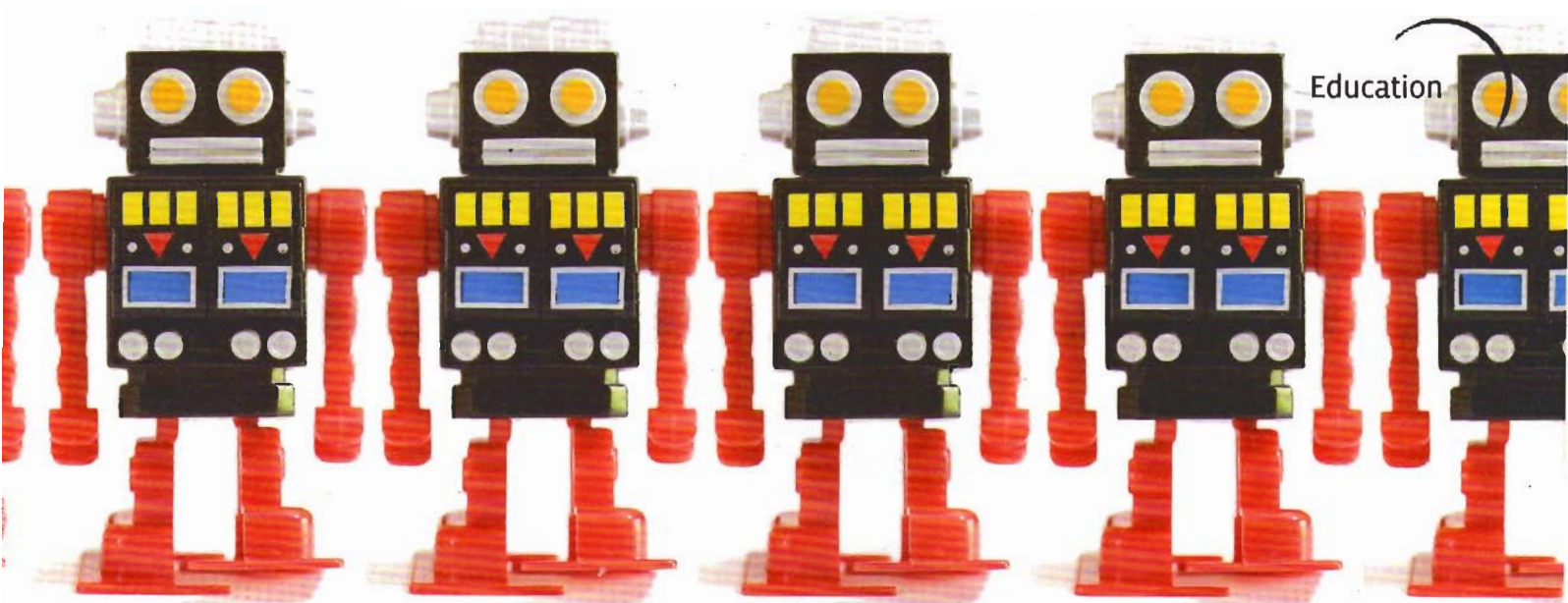
says. 'We have to move beyond framing the discussion as a matter of how many exams a child has, and ask the question, "What will our children be like as people, as human beings, when they leave school?" – and having established that, what to do in the process of education to achieve that.'

Reframing the role of the arts.

Obviously, it is important not to dismiss the value of the verbal and mathematical reasoning central to academic life today. As key drivers of the Industrial Revolution, one can argue that their benefits to society to date have been immeasurable. By the same token, it is arguable that we won't work out how to solve the environmental costs of the Industrial Revolution if we continue to equate these faculties with the totality of human intelligence.

As an index of human potential, current leading-edge research into the brain points towards a far more diverse, human intelligence than previously suggested by the notion of the intelligence quotient (IQ). American psychologist Howard Gardner's multiple-intelligence theory, for example, broadens the concept of intelligence to acknowledge behaviours and skills that would otherwise be called 'abilities', as reflective of the different ways people think and learn. His schematic of eight different types of intelligence includes naturalistic intelligence (nurturing and relating to information in one's natural surroundings) and bodily-kinesthetic (the intelligence deployed in activities that utilise movement: sport, dance, acting, building and making things). Hardly the stuff that will get you into Mensa.

If we want to create an education system that creates citizens whose curiosity extends beyond the next episode of their favourite TV



soap, however, and who aspire instead to be creative, intelligent guardians of the Earth, then it's arguable that a more diverse, child-centred education, including a central role for subjects that nurture nonlinear, creative thinking, is essential.

The current UK government already knows about the value of a more creative and diverse education. Indeed, that's what a national commission, led by Sir Ken Robinson, recommended in its 1999 report, 'All Our Futures: Creativity, Culture and Education'. Without using the word 'holistic', the nub of the report's message was that the arts and humanities should have equal footing with all other areas of the curriculum, and that this was not at odds with children's academic development.

Instead of the arts and humanities becoming infused throughout the curriculum, however, the Government has instead simply tacked on a few new initiatives at its edges.

These include the much-vaunted 'arts mark' programme run by the Arts Council (which recognises schools with a high level of provision in the arts) and the Government's rather paltry investment in dance for school-age children of £5.5 million over the course of the next three years.

It would be easy to suggest that this neglect is because policy-makers have a distorted view of the arts, as less valuable than subjects such as Information Technology, which can help children take their place as workers in the information society.

But it's just as likely they are reflecting the

collective view of the arts today, as a ticket to stardom – an idea fuelled by The X Factor, Pop Idol and celebrity magazines – a path for the chosen few (yet unrealistic for the majority) to be celebrated and recognised by their peers; to be 'more' in a world where they feel 'less'.

The fact is, for creativity (as approached in schools) to be relevant in people's lives, and for them to understand the relevance of its contribution to society, it needs to be understood on more levels than we currently do. The ability of music to open the mind and utilise both hemispheres of the brain is, for example, directly relevant to numeracy and literacy, since it stimulates whole-brain thinking.

Seen from another perspective, subjects such as dance also have enormous value especially in early learning. Daniéla Hucher is a teacher of eurhythm (an art of movement that strives to reveal the fundamental creative principles underlying

speech and music) and director of L'Arc en Ciel, a Steiner-Waldorf kindergarten. 'Early learning should especially focus on allowing children to properly experience their body and its capacity to walk, to jump, to dance, to climb,' she says. 'Without this experience, a child's spatial awareness, ability to experience wellbeing, and engage the full capacity of their brain, will never be complete.'

Juxtapose this with the view of Andy Burnham, the secretary of state for culture and the man behind the recent Government investment in dance. He acknowledges that dance is about self-expression, self-confidence

and physical development, and yet still refers to it as a 'pastime'.

With its emphasis on the process of self-expression, the creative experiences offered by subjects such as music, art, drama and dance can also arguably help children develop their 'emotional intelligence', by offering them a channel to express their feelings and to cope with them constructively. Essential skills, it seems, in a world marked by misunderstanding and interpersonal conflict.

From assembly line to garden

There are many people who feel the challenge today is not just to change the curriculum, or even the pedagogy, but instead to transform education totally by changing the root metaphor on which it is actually based.

'We are still in thrall to two ideas,' says Guy Claxton. 'That a school is like an assembly line, bolting on bits of knowledge as kids go by in batches, and like a monastery, where the priesthood dispenses Truth to the novitiates from on high. New metaphors might be of a school as a "learning gymnasium", where you go to build your mental muscles and develop a fitter mind. Or school as an exploratory, where the curriculum is composed of real challenges that stretch and strengthen young people's resilience and resourcefulness.'

Sir Ken Robinson calls for education to be based on a new, more organic metaphor, one that can offer a more personalised education to fit the individual needs and motivations of each student. 'Gardeners and farmers know they can't make plants grow: plants grow themselves,' he says. 'Gardeners and farmers provide the conditions in which they will do that best. That's the challenge for education – to provide the best conditions in which the individual talents of all students will flourish.'

'The ability of music to open the mind and utilise both hemispheres of the brain is directly relevant to numeracy and literacy'



'A recent report says the skills encouraged by arts and crafts do more than simply stimulate the part of the brain that controls movement'

With its emphasis on the role of the imagination in learning, sensitivity to the emotional development of the child and an overarching goal to provide children with the basis to become free, moral and integrated individuals, you might think the Steiner-Waldorf pedagogy has finally come of age, or that the modern world had finally come round to what Rudolf Steiner was saying 90 years ago. Today, there are more than 1,000 schools worldwide, and this month the Hereford Waldorf School is set to become the Hereford Steiner Academy – the first state-funded Steiner-Waldorf school in the UK.

Christopher Clouder, CEO of the European Council of Waldorf Schools and director of the UK Waldorf Schools Fellowship, says: 'We're finding that the ideas we've espoused for decades, such as the central role of play in early learning, social emotional learning, a responsible attitude to the natural environment and the importance of art and craft activities, are becoming more mainstream. We don't feel we have all the answers, but certainly feel that what we offer is beneficial to more children than simply those that attend our schools.'

Indeed, the manual skills that crafts such as weaving and blacksmithing offer may become increasingly in demand in the future. The fact that children in mainstream schools don't learn skills such as these only reinforces our over-reliance on technology, and reduces the likelihood that they will learn to reuse and repair things. Not only that, these children will also miss out on the role such activities can play in the development of the brain.

A recent report, commissioned by the Ruskin Mill Educational Trust, says the skills encouraged by arts and crafts do more than simply stimulate the part of the brain that controls movement. The report's author, Dr Aric Sigman, says without arts and crafts children will miss an important part of cognitive development. 'The hands are particularly sensitive to perceiving and transmitting exceedingly sophisticated information to the learning brain through sensation and movement,' he says. 'Using their hands simply makes children more intelligent.' So, less time holding a mouse in their hands and more with a screwdriver or chisel?

Grassroots change

We must beware, however, of creating a one-size-fits-all pedagogy – even those with a higher ethical agenda, such as Waldorf Schools – at the expense of promoting diversity. Not everyone wants the same thing for their children, and while it may gall exponents of different pedagogies to admit it, parents should be free to choose what they want for their children.

Sir Ken Robinson believes we need to move beyond the obsession with tinkering with the curriculum and standards (both of which have preoccupied successive governments for 30 years) and instead create a diversity of schools that are able to meet similar standards, but in their own ways. 'The catering profession offers a powerful metaphor here,' he says. 'In the catering sector there are two models of quality control. One is standardisation, which is what drives the fast food industry. No matter which outlet you go to, you know exactly what you're

going to get. The other model is the Michelin Guide. The guide sets out the characteristics of great restaurants, but they don't tell them how to reach those standards. They do it in their own way, at a local level. The result is that every restaurant is different, and all great.'

Guy Claxton believes this diversity can be created by offering teachers more flexibility about the style in which they deliver a subject. His 'Building Learning Power' programme for teachers is being used at more than 1,000 schools throughout the UK, helping children to be more *resilient* (being able to focus on learning when learning becomes difficult, and staying engaged despite distractions); *resourceful* (being able to use a range of strategies to maximise learning); *reflective* (being able to take responsibility for organising and planning learning) and *reciprocal* (being able to work alone or share ideas in group work).

Sam Freedman, head of the Education Unit at think-tank Policy Exchange, believes we can create more diversity in mainstream education by expanding the range of outside providers. 'Many people will assume this will play into the hands of big businesses, but there are many outside providers offering new innovative approaches to education, like Sweden's Kunskaappskolan, which offers a more personalised education to children who are empowered to identify their own goals,' he says. 'Opening up to other suppliers offering different pedagogies, like Steiner-Waldorf and Montessori, would also further enrich the national curriculum.'

Can we really wait for central policy to catch up with current thinking, though?

There's no doubt we should keep lobbying, but in the meantime we can begin by creating educational projects at grassroots level right now. And it's at the grassroots level that really exciting things are happening. Inspired by a range of views and ideas, including the Reggio Emilia pedagogy, which offers children some control over the direction of their learning, Matt Goldman, founder of the US-based Blue Man Group, recently set up an independent

school in New York, called the Blue Man Creativity Centre. He says: 'Our educational model comprises six Areas of Connection, which describes our approach and the key elements we want to "connect" to the subjects in our curriculum. Each of these areas relates in some way to the idea of connection, whether it be the connection to a community, to one's emotions, to one's artistic voice, to one's body, to the world, to one's interests or to one's sense of joy and wonder. Our model emerged out of a desire to achieve a new kind of balance between academic rigour and academic enchantment. We believe that both are essential attributes of a truly exceptional education.'

Learning for the planet

In the Ardèche region of France, Sophie Rabhi, daughter of famous French environmentalist Pierre Rabhi, runs L'école à la Ferme, open since September 1999. The school follows a pedagogy that embraces the child-centred educational ideas of Maria Montessori and the methods of non-violent communication formulated by Marshall Rosenberg. More recently, a project has been undertaken to

situate the school amid a group of retirement homes, and so encourage the connection of young and old within the community.

In Bali, the Green School, which opens this month, offers a vision of a school its founders say will create inspired thinkers and creative problem-solvers, knowledgeable about all aspects of life and capable of leading a changing and challenging world. The school claims to offer the same holistic educational approach of Steiner-Waldorf, coupled with Howard Gardner's idea of multiple intelligences, to create a fertile environment for a wide variety of learning

More information

www.kunskapsskolan.se

www.greenschool.org

[www.la-ferme-des-enfants.com/
index.htm](http://www.la-ferme-des-enfants.com/index.htm)

theblueschool.net

www.steinerwaldorfeurope.org


www.herefordwaldorfschool.org

[www.buildinglearningpower.co.uk/blp/
home.html](http://www.buildinglearningpower.co.uk/blp/home.html)

www.montessori.org.uk/schools.php

styles. Its students will know about everything from organic gardening to website design, from running a small business to offsetting carbon emissions.

If we do not reconsider the role education plays in society, then from the viewpoint of the environment there's a lot at stake. Leaving the education system joined at the hip to a deeply flawed economic system is not an option while that system fails to embrace the triple-bottom line, or planet, people and profit.

The notion of sustainability implies there being enough people to carry through change. Unless we nurture the current and future generations of children to engage with society in new ways, any changes we collectively make to address the environmental imperative will be short-lived. We must be willing to draw on the full range of human intelligence in service of creating a better life for all. Only a more diverse, creative education can do that. 

Nick Kettles is a freelance writer and consultant to small businesses seeking to express better their unique contribution to world peace and sustainability