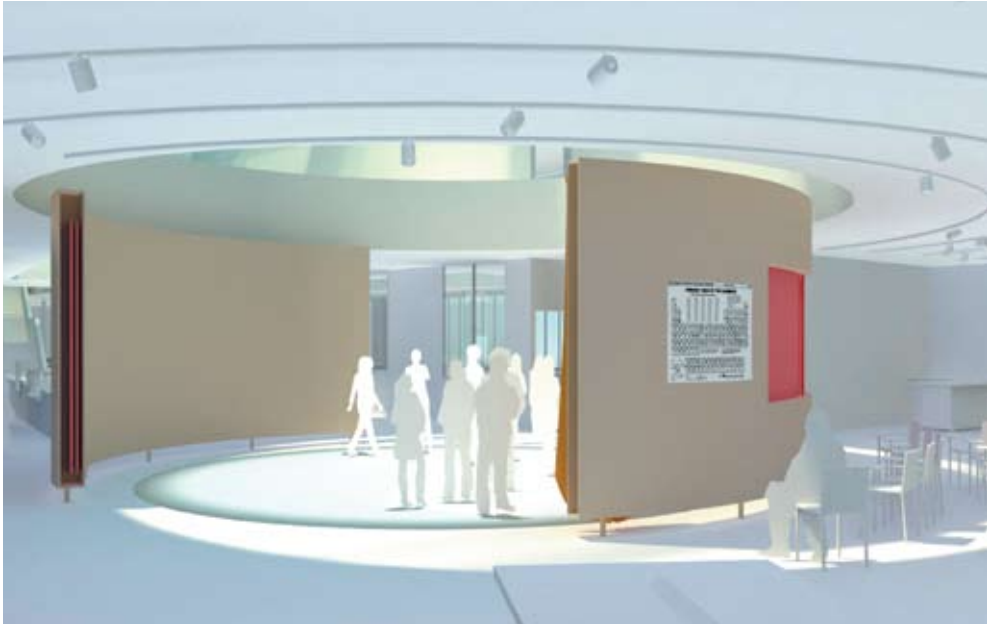


Places to learn in the 21st century

Stephen Heppell

What should the learning spaces of the future look like? Those of the past, argues *Stephen Heppell*, have done little to encourage highly engaged learning. A radical reimagination of learning spaces is needed to reflect the reality of a globalised and networked world where teamwork is valued alongside individual endeavour, collaborators can be on a different continent, and people develop their own solutions. If education is too stuck in its ways to take a lead, empowered young people will reform things for themselves, exploiting the new technological tools that have already revolutionised their social world.



A school in Christchurch, New Zealand, is built with a lifespan of less than a decade; its students are all in place on day one and at that point the school roll is complete. In a school in Dudley, England, children study just one subject for a whole month, two years early, and complete their examination requirements before moving on to another subject the next month. In Bangkok, a community learning space atop a shopping mall is thronged with families, from young children to their grandparents. A tiny Caribbean school with a handful of children finds itself linked to a global network of other tiny schools as its scale becomes its greatest asset. In Minnesota, a school abandons timetables, subject headings and age phases, and finds that engagement leaps forward. An online global virtual school for those excluded from school finds re-engagement figures around 98 per cent, up from zero. A Tasmanian school, allegedly torched by its students, is rebuilt in a radical new way by a community, which sees learning rise phoenix-like from the ashes. In Australia, a school is built with barely any staffroom at all – “everyone here is a learner,” they say. In the Cayman Islands, a large underperforming school is rapidly subdivided into four entirely new schools; names that children choose for these new schools include ‘Leading Edge’ and ‘New Horizons’. In Iceland, a new school, with a roof waved like the Atlantic, offers small ‘family’ learning units.

In every case these radical departures from the staid old model of 20th-century education are also characterised by the extraordinary results they produce. Welcome to the world of 21st-century global learning.

Around the world, education is changing. Or perhaps more accurately, learning is changing, despite education. That in itself is news; traditionally, education has been characterised by a slowness to change, an inherent conservatism and a reluctance to climb on board the bandwagons of fashion or political fads, perhaps historically with good reason. Those fads have come and gone – who remembers the Initial Teaching Alphabet? – but since children



This page and opposite:
School science area designs
produced for the Government's
Project Faraday.

Clockwise from above:
Demonstration area for East
Barnet School, Hertfordshire.

DEGW

Incident centre for Rednock
School, Gloucestershire.

cube_design

Bio-dome for Cramlington High
School, Northumberland.

Waring & Netts Partnership

Courtyard learning space for
Bideford College, Devon.

White Design Associates

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get only one chance at their youth it has generally seemed reckless to tinker with their learning. It might seem unthinkable to wish that today's dentist practises in the same way as the one you had when you were a child, but as recently as the 1990s many wanted schools frozen in a state of familiarity that parents, and indeed grandparents, would find comforting.

But the transition to the 21st century proved to be a huge watershed. Curiously we approached the year 2000 looking backwards: at the amazing progress from mechanical to digital, from national to global, from pen to processor. With hindsight, we should have been looking forwards, because the first decade of the 21st century is already nurturing a revolution in our economic, social, cultural and learning lives. That revolution has such profound implications that not all of the major institutions of 20th-century learning are likely to survive.

In the last century, by and large, we built big things that did things for people – a rail service, the BBC, a national curriculum, and so on. This could be interpreted in many ways, from a pragmatic response to the postwar baby boom years, to ideological and economic determinism. The economic mantras of the last century focused on the new economics of mass production, which reached out for economies of scale (often delivered through geographical proximity). Thus we built big factories, big housing estates, big new towns, big shopping centres, huge corporations and worryingly oversized schools. Indeed the UK rewarded headteachers by paying them on a scale related not to performance but to scale: if a headteacher took a successful small school and grew it into a failing huge one, we rewarded the effort with a substantial salary rise. Big was beautiful, and the realities of mass production arguably clouded judgement on more social matters so that we overlooked the alienation, disengagement and bullying that characterised huge schools.

The closure of small schools was often justified by the rigidity of a timetable seemingly inspired by the time-and-motion clipboards of factory inspectors. “With your limited timetable,” the argument

went, “you will not be able to offer Russian as a 14–18 specialism.” The huge-school timetable, like so much else that was done organisationally for convenience rather than to engender great learning, was one of many factors that were failing learners and learning. But rather than ditching the rigidity and compartmentalism of the timetable, it was always the small school that felt the axe.

And thus the nation blundered into the barren ‘cell and bell’ era, which we are struggling even now to escape. For certain, history will show the period 1950–2000 as the era of aberration. Some (Bowles and Gintis, 1976) have suggested a mechanistic link between mass-production factories and the mind-deadening structures of late 20th-century schooling. With mindless jobs to fill, and barely 7 per cent going on to university, the last thing the economy needed, arguably, was enquiring minds. But these dull structures might equally be seen as a simple panic engendered by the vast numbers of postwar babies in the big developed economies. In the UK, with a birth rate that finally peaked in 1964, at some points in the 1970s new schools were opening every day. That speed of development inevitably left little space for reflection, evolution or, indeed, common sense.

How is today different? A fundamental change is that in the 21st century new information and communications technologies have empowered people, given them a voice and, perhaps even more profoundly, created an era where all the success stories are about helping people to help themselves – as seen with Google, eBay, YouTube, Facebook and indeed with a substantial growth in the voluntary sector too. It is a time for collegiality, collaborative endeavour and communication. Whole industries (like travel agents) are being passed by as people use the newly democratising tools available to build the product that they want, on their terms. Perfect competition, so long just a model in economics textbooks, with buyers and sellers all knowing about each other, looks suspiciously like eBay.

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The old 'cell and bell' schools were built for a variety of reasons, none of which included being ambitious for the learners within them. Excellence came to be represented solely by the ability to conform – a huge part of teachers' days were spent imposing conformity, from examination answers to dress code, with a few perhaps tempting learners with an occasional illicit glimpse of a world of more ambitious learning: "I shouldn't tell you this until A level, but I'll tell you now anyway." If you were educated in this era, these are the teachers you remember.

Mercifully, that was then, and this is now. Today, companies look for ingenuity, for teamwork, for leadership yes, but for 'followship' too as rigid corporate hierarchies give way to more organic project-based work. They seek an ongoing commitment to learning, to exploration and to an agility of mind and practice. Rather than uniformity, employers seek that 'spark' of originality that makes a candidate stand out at interview, together with a track record of passion for learning and evidence of fitting in with others.

A tide is running across the education systems of the world: from one size fits all to personalisation; from quality control to quality assurance; from fixed short periods of timetabled learning to longer open-ended blocks, sometimes weeks long; from narrow (and often artificially distinct) subjects to project-based multidisciplinary work; from a start time at 09.00 and a finish time of 15.30 to extended opening and 24/7, 365-day access; from children ghettoised by their birthdays lying between two Septembers to mixed-age, cross-phase learning; from national to global; and so on.

All these changes have a profound influence on the physical and organisational design of education. For example, many secondary-age schools have armed some of their more turbulent children with stopwatches, telling them to record how long it takes them to finish one lesson and start another. It would be a rare school that found it was not losing 20 per cent of its learning time. In the 21st century

we cannot afford to sacrifice the equivalent of Friday every week to systems that serve no purpose. More enlightened schools have abandoned the ‘cells and bells’ model. One by-product of this is a loss of the friction that occurred in school corridors, but the main impact is that schools being built today simply don’t need corridors, because the children stay put with their heads down, learning, for much longer. And not surprisingly the considerable extra space and time thus liberated both contribute to much better engagement and performance.

Although there is a lot more to 21st-century learning spaces than simply a lack of corridors, corridors do provide a useful metaphor for the limiting and linear model of 20th-century education. Corridors slow, constrain, direct and box in. The 20th-century factory schools at their worst did the same to children’s learning. Why on Earth did schools put 30 children in a room simply because they were born between two Septembers? How did they contrive to create a glut of biologists and technologists but a national shortage of biotechnologists because subjects had been compartmentalised? Why did schools imagine that they could ring a bell at 12.30 and have 1000 teenagers simultaneously hungry? Even Skinner couldn’t get his rats to conform so uniformly. By limiting learning options, these factory schools were driving children’s ambitions down a ‘closed corridor’, where success was defined in a very limited way: exam passes, linear notation, recall and conformity.

But where, in the 20th century, we had countless mindless jobs and too many children passing through schools, today we have robots to do the mindless tasks and we need ingenious engaged children to design better robots. Meanwhile, children have become scarce in western Europe and will become more so. Politically, this has moved the rhetoric away from simply ‘processing’ children towards a vocabulary of personalisation, of Every Child Matters and of lifelong learning. Personalisation is about being ambitious for every learner. Learners’ needs change, their learning preferences

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change and can change daily. They even vary with the weather. Personalisation is about building learning experiences that are seductive, engaging, delightful and personal – emphatically not individualised learning (the dreaded 'drill and kill' of Bush's failing 'No child left behind'). Most of all it is full of mutuality, collegiality and helping people to help themselves: mentoring, coaching, supporting, twinning, blogging, podcasting, sharing, learning. Unsurprisingly, the physical buildings needed for a personalised education system are very different from those needed before.

Powerful technology enabled us to decode the human genome. Tomorrow's computers will be vastly more powerful yet. What will be the ambitious tasks that we might strive for and what capabilities will our learners need to be evolving today in our schools to prepare them for those tasks? Moore's Law gives us a sense of the pace of growth of microprocessor capability; perhaps we need a Heppell's Law to suggest that if learning opportunities don't keep pace with that power then we will have missed the opportunity to harness it! A significant part of that change must lie in the buildings and organisation that shape education worldwide.

Another dimension of learning's change is the leap from national to global. As you read this, consider: your shoes were made in, say, Italy, your clothes in China, your computer assembled in Ireland from components sourced in South-east Asia and designed in California. In this joined-up global world of overlapping functionality it makes absolutely no sense to talk of a 'national curriculum'. In 2007, a tiny school with five students on Little Cayman in the Caribbean joined up, through a simple IP chat facility, to an equally tiny school for older children with hemiplegia in Surrey, England. They swapped thoughts, dreams and data. The special school older children are mentoring the younger Caribbean children. It is one of many visions of the power of global learning. Be aware that neither school has even six students, yet the richness of their exchanges shows, as many have shown before, the value added from global learning interchanges.

Trying to box each end of this powerful social interaction into a different national curriculum in each of two different countries makes no sense at all. With the larger numbers we now have migrating across traditional geographical boundaries, a more global palette of learning would seem simply common sense if we are achieve the best potential for all our scarce learners. Indeed, 21st-century learning is already global in the forums and self-help communities of the internet. It is time that schools were too.

So, despite the inertia of education systems and policy, learning is changing and in some cases taking sections of formal education right along with it. Self-evidently, the conservative pace of change of educational policy is not rapid enough for that policy to be able to tell schools and learners what to do. YouTube went from start-up to billion-euro acquisition in less time than it took to develop an advisory policy about its use in schools. Policy makers have a central role, but it is of defining vision and philosophy and then asking schools and learners how to achieve that vision effectively. This is the reality of the bottom-up world of new learning. But around the world schools and learners are not prepared to wait, or to power down to enter education; they are getting on themselves with some remarkable changes, armed with powerful technology in their pockets and desks, linked to reassuring pioneers worldwide, and buoyed up by exceptional results. The revolution that is 21st-century learning, and the radical spaces that are evolving to house it, are both unstoppable. The only two questions left are whether these new learning spaces will be schools in any sense, and just how good our learners might be if together we get the designs right.

It's shaping up to be quite a century already.

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