It was billed as a debate on “Productivity in Education”, but the second Education Fast Forward global forum ended with near-consensus on a radical proposition: that, when it comes to maximising the potential of students, schooling as we know it is well past its sell-by date.

The conclusions of the 32 distinguished innovators taking part in the live online debate from 19 locations across six continents, differed only in the degree to which they would change or replace existing structures.

Introducing the event, Promethean’s CEO Jean-Yves Charlier underlined the urgency of the issue: “It’s obvious the world has profoundly changed with the recession,” he said, “and while governments race ahead to fix problems created in the short term, I think we all agree that education has to be a fundamental pillar for economic growth in future. So this debate about the effectiveness and efficiency of education systems is a very important one.”

That, he added, was why the entire debate was going out live on Cisco TV, why it was being tweeted and blogged, and why the whole proceedings would be available online for a year – so that the largest possible number of education professionals could access it, and hopefully be inspired by the ideas that emerged.

The Education Fast Forward initiative was the brainchild of Promethean’s chief education officer Jim Wynn, who set the scene for the debate. New ways of learning, and new technologies to assist and accelerate learning, were present everywhere, he said – except, it seemed, in the place they were most needed, classrooms.

Whether it was using origami to solve the age-old mathematical problem of trisecting a triangle, or a young child devising a new Android app to help ambulance crews find remote locations, the solutions were already out there – the problem was that schools were not able to use them.

“In the past perhaps it was OK for education to move slowly… but the world is changing more quickly than education itself,” he said. The recession made change all the more crucial – but at the same time it would be more difficult to convince the decision-makers in government to invest in change: “Yet unless we get that magic way forward, people will say we can’t afford it. I’m worried we don’t get to the point where we can convince people this is achievable.”

That was the crunch point that would be echoed by EFF members around the globe throughout the debate – the difficulty of convincing politicians and purse-string holders that radical changes in structures, accompanied by judicious use of new technology, was not merely desirable but essential to bring education into the present century. Jim Wynn urged us to jettison any unfortunate associations of the word “productivity” – it was not the “pupils as tins of baked beans” model of educational productivity that was required, but a new productivity based on bringing the full creativity and skills of young people into the economy.

Precisely the sort of productivity that the event’s two guest speakers had, with spectacular success, elicited from their students, young people who had been failed by the education mainstream. Both Richard DeLorenzo and Jean Johnson were at the radical end of the innovation spectrum: they had already successfully replaced school structures, or completely bypassed them, rather than attempting to fix them.

Speaking from San Antonio, Richard DeLorenzo, founder of RISC (the Reinventing Schools Coalition, www.reinventingschools.org) - explained how his approach had transformed the educational fortunes of children in “a very needy school district in Alaska.”
When he arrived at the Chugach School District, “90 per cent of students could not read at grade level, and we only had one college graduate in 20 years”, Richard said.

His method was to bring together all the stakeholders to decide what the students wanted to learn, and how. It became clear that the way ahead was to ditch the time-based school system that prevails across the USA (in which students are expected to accrue Carnegie Units or credits of time spent in school) and to replace it with a performance-based system, so the pupils learn what they need to learn at times and in places that suit them best.

In five years, Chugach went from being one of the lowest performing school districts in Alaska to one of the highest. This, Richard said, was chiefly the result of “five things we did really well”.

These were:

1. Ensuring the relevance of learning – “kids have to have ownership of what they learn. It has to mean something to them”.
2. Building relationships – student to student, student to teacher, teacher to teacher;
3. Responsibility for learning and assessment transferred from the teacher to the student;
4. Rate of learning - “We increased it – kids perform actually above their ability rate”
5. Rigour – we were able to increase the rigour, what the kids had to do to be successful in the global economy.

“Since then, we’ve tried to scale our work, and the mission of our foundation is to try to impact one million students throughout the world.”

This he said, required a “paradigm shift” that had been incredibly difficult to achieve in the face of political and institutional inertia. It had required a massive amounts of “heavy lifting” on the part of teachers, and the same would be true for anyone trying to make similar changes anywhere else. But it had been more than worthwhile.

In terms of productivity, he believed the RISC approach could accelerate learning to the extent that students could attain university degree level by the age of 18 – on the basis that he was routinely seeing students performing “two or three years ahead” of the national standards for their age. notschool achieved some amazing gains.

Jean Johnson, director of the UK’s notschool.net initiative, began with a suitably provocative statement: “I have a huge difficulty with school as we understand it both culturally and economically, because I don’t think it works”, she said.

She said that recent attempts to mend the system, such as BSF had been the equivalent of patching a punctured bike tyre: you could only repair an inner tube so many times before it had to be replaced completely.

Notschool.net – an initiative that grew out of Professor Stephen Heppell’s Ultralab back in 2000, had been “astonishingly successful” in using online technology to re-engage kids who – for whatever reason – could not or would not progress in the traditional school system.
“Over the past 11 years I’ve worked with about 6,500 kids in the UK,” Jean said. Originally she worked with the marginalised – the drop-outs, the ill, the excluded kids. More recently she’s noticed that “the number of kids we’re working with – it’s gone from the marginalised few to increasingly becoming the norm… Kids are voting with their feet”.

“I actually think you have to have quite a good mindset to avoid school – you have to be quite clever, quite intelligent and really know what you want out of life and where to go!”

And if the kids won’t go to the learning – the school – “we have to take the learning to them”.

Installing broadband connections and PCs where needed, and providing expert teachers at the times the students needed them – and creating networks of learners – notschool achieved some amazing gains.

She’s convinced that the model is good for all young learners, not just drop-outs. On this basis, the notschool.net model is being extended in projects in the USA, involving 1,500 students in the state of Michigan. Similar schemes are starting up in Victoria, South Australia, and Tasmania.

“In the USA, we’ve taken it a stage further,” Jean said. “We’ve taken our constructivist approach to learning, a totally child-centred approach, and kids have opted to take part. The difference is they decide to go into the school a couple of times a week, they negotiate this, they learn what they need to learn from teachers, who are actually doing a fantastic job because they are doing what they like doing in a creative way, in small groups, or one to one.”

She added: “I suggest this a very sustainable, scaleable economic model” – a model in which buildings are open all year round, and in which expert teachers are brought in when needed: an “open source” model of schooling.

Already she added, notschool.net students in the UK were talking to their counterparts in Michigan, sharing ideas and challenging stereotypes. “We are are moving towards mapping US to UK standards, and it can be done.”

Jean also noted how the EFF medium – its use of the high-definition Cisco TelePresence global conferencing system which made participants from six continents appear to be a sitting around one table – could also be part of the message. “If we had one of these rooms – well!”, Jean said.

This virtual meeting also made clear how much the RISC and notschool.net models had in common. “We have to talk!”, Richard DeLorenzo told Jean Johnson. And talk they will.

For many labouring inside existing education systems, the RISC and notschool.net models – impressive as they are – raise as many questions as they answer.

For example, a new EFF member, Haif Bannayan, CEO of the Jordan Education Initiative, wondered how the RISC could be adapted for the “more rigidly structured environment” of a country like Jordan, “where public schools follow strictly the policies issued by governments”.

Like many others working in the developing nations, he had encountered scepticism when attempting to introduce new methods of learning – such as the use of gaming technology – and new structures. Getting politicians and power brokers on side was a pre-requisite for major change: these people had to be convinced that such change would be good for their economies. Too often, it seemed, political leaders could see empowering a younger generation as more of a threat than an opportunity.
Another new EFF member, education innovation specialist Katrina Reynen from Melbourne, Australia, suggested that this need not be a polarised debate, favouring a “hybrid mode” in which “we take the best of what you do and apply it to our system”.

“We’re doing notschool.net here, and looking forward to it. But it’s not as an ‘either/or’ – it’s a complement,” she said.

Speaking from Sao Paolo, Eduardo Chaves felt that it was perhaps too late for compromise. The only real question, he suggested, was whether we should adopt a notschool-style model for economic reasons (because building schools is too expensive) or for pedagogical reasons: “because schools are useless!”

While no-one was rushing to defend the traditional model, there were concerns about removing school altogether. Two participants from the Toronto-based TakingITGlobal initiative (www.tigweb.org), Kate Lang and Deanna Del Vecchio, raised the matter of the social interaction children experience simply by being at school with their peers. If most learning was online, Deanna wondered, what would happen to those “casual opportunities children need to interact with peers”?

Jean Johnson felt this was more of a problem for teachers than for students, for whom social media was the preferred arena for socialising. When she asked her notschool.net students if they wanted to meet their peers, the answer was “yes, about once a month”.

The notschool.net model also rejects distinctions between formal and informal learning. Jean said they went to lengths to identify and reward a child’s leisure-time learning – say, football skills gained on a Saturday afternoon – just as much as if they were learning maths in a classroom.

But educational psychologist Karen Littleton of the Open University warned against assuming that “it’s somehow easy to work with what’s meaningful to students”.

She cited the case of some well-meaning teachers and youth workers who tried to engage children in a youth group by playing the music that they liked. “This was actually a disaster,” she said. “They did not want their music legitimised in this sense.” By doing this, it appeared the adults were trying to appropriate something that was just too important to them, and way outside school – it could almost be insulting.

“Some of those students were doing fantastic work, but the notion of rewarding this formally, I think some of them might have resisted that!”

None of this was an argument for retaining the status quo – again, it was suggested there were ways of engaging students through their enthusiasms that did not have to be patronising – but, as the session’s moderator, Gavin Dykes, noted, there was all too often a tendency for worthy “learner voice” based projects ending up as nothing of the sort.

Or, as Richard DeLorenzo said, the idea of shared vision was all too often a superintendent saying, “Here’s my vision. Let’s share it”.

A blue-skies education thinker, Riel Miller, wanted to widen the perspective of the discussion – or as he put it, to “pull back the lens a bit”. Recently, at a climate change conference in Oxford, he’d met a man from a village in Sierra Leone who had explained the key role of storytelling in the creation, preservation and diffusion of knowledge. “This was in Oxford –
probably one of the primary examples of how we do that today”, he said. Thus, the most sophisticated education institutions in the developed world fulfil a similar function to tribal storytellers. The knowledge they impart has equivalent importance – “They use knowledge to create sustainability. It has huge value”.

Riel wanted us to consider productivity in education in this light: “productivity to what end?” He believed the discussion so far had been too much from the viewpoint of a “deeply industrial, convergent world” – whereas he wanted to think about “ambient learning, not just hierarchical but heterarchical”.

The point being that we are entering the post-industrial age, yet our education structures still adhere to a Victorian model.

Sean McDougall (right) pointed out that the Victorians used mass-production techniques in schools to scale up for the industrial world – it was about creating identikit people: “The process used in car factories – Plan, Do, Check, Act – was good at producing large numbers of identical products. Cars – or A-level students.”

“But now car manufacturers are all dropping that old system. Toyota now uses one called LAMDA - Look, Ask, Model, Discuss, Act – and that’s considered a much more appropriate model for creation of new knowledge.”

“What you need in a proper 21st century education system is spaces designed for sharing of pre-existing knowledge and places designed for the creation and acquisition of new knowledge. They can co-exist in the same campus.”

On the same theme, Dr Michelle Sellinger of Cisco posed the question, “what makes education productive?” Our industrial model of education, she said, “does not suit a kid in rural India or even rural Scotland…We need to contextualise it, it’s not one size fits all, it’s not the PISA model”.

From Sydney, Australia, Jenny Lewis, CEO of the Australian Council for Educational Leaders, said this was a live and pressing issue, with the business community complaining that they are not getting students with the problem solving and management skills they desperately needed – “because we forgot to tell you we were about to have a massive mining boom in Australia, but without the qualified workers!”

In terms of creating a new generation of economic innovators, professor Adrian Oldknow from Chichester University believed a great opportunity to engage young people in the STEM subjects (science, technology, engineering, maths) was being missed – largely because of inadequate teacher training.

“We have kids using technology without understanding how it works”, he said. “The technologies are here to make the wonders of the world more readily available to kids - but teachers don’t know how to use them.

“It’s a fantastic CPD issue – a challenge. What’s called enhancement and enrichment in school – we could marry the technology of education with the technology of the world of future.”

We might be in a post-industrial age but it was not in anyone’s interests to ignore the requirements of the labour market. That market needed to know, quickly, what people applying for jobs can do. The thorny problem of assessment was never far from the surface of this debate, and again, the prevailing view was that the old summative versus formative assessment dichotomy was unhelpful.
From Illinois, Conrad Wolfram noted that “inevitably there’s always a lust for assessing people… but how do we set up assessment in a way that doesn’t disturb productive learning?”

“I’m thinking of maths and STEM education, and that’s certainly a big problem there.”

Peter Kent, in Melbourne, called for more rigour in the assessment of innovation in education: “If you go where innovation is taking place and ask is it successful? Are they doing more?” – the answer is ‘Yes.’ But we needed to know, by how much is it better?

Jean Johnson believed a more practical model of assessment would help, especially for STEM subjects: “As an employer myself, and I often scratch my head at what’s on paper in terms of assessments and ticking of boxes – I’m actually interested in how that person can perform in the workplace”.

In his Alaskan schools, Richard DeLorenzo had to ask for a waiver on the summative assessment system – “because we had built such great formative assessments that are relevant and meaningful to the children – that really show the application of their learning”.

Riel Miller agreed that that the summative, hierarchical model of assessment had overshadowed any other model “because it has been so successful” – but only in certain areas of knowledge. Rocket science, for example.

And yet – as Jim Wynn noted – summative knowledge (and by extension summative assessment) is vital: “You have to be able to build on what’s gone before – like rocket science, you can’t reinvent it from scratch each time.”

There were moments in the debate where disparate ideas suddenly seemed to coalesce – momentarily throwing entirely new light on the topic. One such was Richard DeLorenzo quoting what members of the native Alaskan community had told him about the problems of educating their children for the 21st century, without losing the values of their tradition:

“They have a saying, ‘We have to walk in two worlds with one spirit’.”

Whenever discussion threatened to fly too far into the realms of theory, there was always somebody ready to bring things back to earth. “It is enlightening to be exposed to different possibilities of education,” said Sister Margaret Wong, the Hong Kong-based pioneer of ICT in education, “but it’s easier to talk than to walk – especially when there’s a very stringent accountability system on students’ achievement as there is here in Hong Kong.”

And former London schools tsar Sir Tim Brighouse – another new EFF fellow – admitted he had “more questions than clarity in my mind”. The supplied a very clear context for reform:

“There’s infancy, childhood, adolescence, a point at which youngsters realise what sort of adults they might become – but in all those periods there are different needs… and therefore it seems to me one answer is unlikely to be right. And you can be critical of our system because (it) is postulated in the main on one answer.”

Sir Tim added that, in gaining “skills and knowledge and understanding…youngsters are going through a period of being dependent, independent, and one hopes interdependent.” But while, for younger children, schools tended to be “really quite good”, they were highly variable when it came to adolescents.

He thought we should perhaps remember that the “people who govern our society in UK had an
education that cost £40,000 a year – and that those who educated them did not think in terms just of skills and knowledge, they were also very clear about attitudes and values”.

“We haven’t had a debate about that,” he said.

“I don’t think we need to teach what their values should be but how to develop their own values and explore what to do about them,” retorted Kate Lang in Toronto.

Cau sing Sir Tim to jump in with: “You want people to think for themselves. Are you prepared to go further, and say, ‘and act for others’? Because once you say the second part you’re into values.”

Asked to clarify by Kate, he added: “That they devote part of their lives enabling other people to be fulfilled”.

“Yes…..” said Kate, then Deanna chipped in with: “It all centres around a sense of belonging, acting – based on their values – to better their communities”.

Sir Tim: “I like that”.

Thus harmony reigned on this transatlantic branch of the debate. Meanwhile, in the Twittersphere, question and comments were coming in thick and fast. One tweeter wondered what the future for textbooks might be, and whether they would be replaced by wikis.

Which led moderator Gavin Dykes to recall the comments of a medieval historian, to the effect that books represented a blip or bottleneck in the history of education. Before books, he said, there was the Socratic method, learning by asking questions, and by apprenticeship: “Now, post-books, we’re going back to something more Socratic, with more apprenticeship, more mentorship”.

“It’s an interesting question – have books had their moment?”

You could almost hear, at that point, a sort of collective gasp of apprehension: books a bottleneck in history? Origami better for maths than Euclid? Why not?

By the end of the two-hour debate there were probably more questions floating in the air than there were answers. We had all been taken fast forward – perhaps too fast for some – and had glimpsed some possible futures of education that had not been apparent before. We’d seen many opportunities, but we had also been made sharply aware, in a truly international sense, of the difficulties and barriers faced by innovators.