

## **Peter Twining**

I was really pleased to be invited to come and speak to you today, particularly to be the 4<sup>th</sup> speaker, because I know that none of you are thinking of filling your glasses or getting more nibbles, or even talking to the people next to you; I shall keep it fairly brief.

My interest is in the future of education and how we might make education systems fit for the 21<sup>st</sup> century, and I'm particularly interested in school-level education systems. As Bob hinted, I was one of the co-directors of one of the strands of ETAG looking at accountability and assessment, and I'll tell you a bit more about ETAG in a minute. But I want to start by talking about the problem, and part of the problem has been flagged up to us already. I'm really sad Nicky left a couple of minutes ago, actually I really wanted to heckle her. We are in the Houses of Parliament, so feel free to heckle me, okay? It's a tradition, we should uphold it.

I'm going on a side-line here, computer science is really important, but it's not nearly as important as embedding technology across the curriculum. Because for most teachers, computer science is not what they do, and for most kids, it's not what they do, and for most adults... It's like you don't have to be able to build a car; some people do, but not everybody. But we do have to understand the impact of cars and how to use them effectively and safely.

Sorry, I rant, I was so controlled when she was speaking. But it was great to hear her say that she wanted schools to prepare kids for the real world, for living fulfilling lives, but unfortunately they don't. They don't prepare them for university, they don't develop the sorts of independence and time management competence that universities expect. They don't prepare them for work, they don't give them the personal characteristics that allow time management, persistence, real problem-solving, communication, collaboration, teamwork, those things we know are so important in the real world. Schools are just too far disassociated with the real world, and this came home to me in a big way.

I was doing some research. Over the last couple of years I've led 22 case studies on schools in England and 13 in Australia looking at the use of digital technology and particularly mobile devices in schools. A small proportion of schools do absolutely wonderful things with digital technology; things that really prepare kids and enthuse kids and get kids in a state where they're really ready to make a contribution and be valuable members of society. They're creative, they're problem solvers, they're communicators, they're collaborators, they're good at learning to learn. And then, three months before the national examinations, they stop doing all that stuff, and they put away the laptops and the tablets – they get out their pens and their exercise books and they go back to didactic teacher-at-the-front teaching. Why do they do that? Because their kids have to get their handwriting muscles into shape so they can write for up to six hours a day without getting cramp; and perhaps, more worryingly, they have to learn how to write on paper, which is a weird and different experience for so many young people these days. Of course, that's a major disincentive for schools to invest in digital technology; if your kit's not going to be used for three months of the year, and it's not going to help your kids do better in the assessment – because the assessment doesn't actually measure the things your kids are really good at – then why the heck would you do it? So schools teach to the test, because they're held accountable against the test. Now you might say they shouldn't teach to the test, but come on; you should do what you're held accountable against. The problem isn't that they teach the test, it's that the tests are rubbish. They don't assess the things that really matter. A paper-based three-hour exam cannot measure some of the things that we think are really critical in the world today, they just can't do it. So, we have a real problem here,

ETAG, the Educational Technology Action Group, was set up by Matthew Hancock, Michael Gove, and David Willetts to give advice to government about action they could take to try and change that situation so that digital technology really did enhance learning across the curriculum, and improve learning outcomes for learners. The sort of stuff that Nicky was talking about, about really preparing them for living in the real world and making a valuable contribution to the real world, and of course UK PLC and all that stuff. The remit we were given was really to be quite radical and think about – Michael Gove actually said in our launch meeting that (and this actually came as a bit of a shocker to me) not only did he actually say the word ‘fun’ three times, ‘school should be fun’, but he also said that he realised that standing back and letting schools decide how they were going to use new technology hadn’t worked, and that government needed to give some strategic direction, and he wanted some advice about what the government could do to really move the field forward. Now one of the most important aspects, and I’ve already hinted because it drives practice in schools, is assessment and why has e-assessment not caught on in schools when it has caught on so well in other sectors? Relatively speaking, because it’s almost non-existent in schools.

So, the problems, and of course there are some real problems. We have terminal assessment, I’m so wanting to make a bad pun about why it’s called terminal, but what it means is that you have to have, you know, in your typical exam centre you may have 300 kids all sitting down at the same time on the same day to do the same exam script, so if you’re going to go to e-assessment that means 300 machines have been moved into your sports hall. Most schools don’t have 300 machines and they sure as heck couldn’t move them all into their sports hall. Even if they had, they haven’t got the reliable and robust technology infrastructure; we mentioned problems with Wi-Fi and with internet accessibility. So, they haven’t got the robust systems you need for high-stakes assessments, because if it falls over in the middle of the exam, you’ve got a real problem. They also don’t have the technical expertise. They also don’t have the technical expertise, the staff, to manage the systems, and that’s exacerbated in situations where they only have to use the system a couple of times a year. So in the intervening stage, they forget how to run it and the system probably needs a lot of work to get it working better again.

We also have all the issues all around the concerns of security and cheating and all the pedagogical issues if you’re doing radical stuff with new assessment methods; what does that mean for how I teach and what I teach? For the majority of schools, that’s really scary stuff. And then you have the awarding bodies. The awarding bodies invested a lot of money in complex back-end systems to deal with our wonderful paper-based systems that we’ve got at the moment, and it’s a major risk and investment for them to change those, and they are commercial organisations competing for customers. So there’s a real commercial risk, if they start moving to e-assessment, which puts the onus on schools to provide the resources to deliver those e-assessments, that they’ll lose market share. There’s a real disincentive to awarding bodies.

And of course, you’ve also got the problem of the regulatory system, which is highly risk-averse; you have a problem with one candidate, and you’re dragged over the coals to explain what’s gone wrong and what you’ve done about it and how you’re going to avoid it happening again in the future. There’s no incentive within the regulatory system for awarding bodies to be innovative with new technology.

So you’ve got these gold standard general qualifications, particularly in a context where other countries are moving rapidly to e-based assessments. Finland, North America, places like Lithuania and Georgia, completely e-based assessment systems. Places like Australia and Tasmania who are working with it. So you’ve got a real challenge about how do we overcome those problems?

So, some possible solutions. In the past what people have tended to do is say “E-assessment is great, it can allow you to do all these really exciting things with simulations and models and blah blah blah”, we heard some of that stuff in a quiet sort of way, but very carefully staged. But that’s scary; it’s too big a leap to go from this paper-based to radical assessment model, we need something that’s much more a change management process, that’s much safer. So ETAG was advocating a kind of evolutionary rather than revolutionary model. Dealing with the kind of capacity issues and logistical issues, before you start dealing with how can we do something radically different. So the model that ETAG was proposing was a paper replication model. A model in which, literally, you have the same exam in paper, and it may be the same paper, but you can either handwrite the answers or you can type them. As simple as that. Now, there’s a real danger with this, because that’s not where we want to end up, but it is a necessary first step because it allows you to deal with some of those issues about access to equipment and the infrastructure problems.

We’ve seen this happen in Tasmania with a system called the Exam System, and with their equivalent of our A-Level Computer Science exam, so the end of secondary school. They went from paper-based exams to open internet exams in three years, and what they did is that in the first year they use this e-exam system which allows you to bring in your own laptop, plug in a USB stick, it takes control of your environment (it boots up Linux in fact). It takes control of your laptop so everyone’s got the same environment, and it’s locked down and you can’t do anything with it. You do your exam on it, or you can do your exam on paper, and indeed if the system crashes you can revert to doing it on paper, and it will have saved what you have done up until the last three minutes. So they did that in the first year, only half the kids were doing it on laptops, half the kids were doing it on paper. The next year, they all did it on laptops. The next year, they didn’t go to the next stage which was to use some of the power of the computer they said, “We’ll go to an open internet exam”. You can email the questions to your friends. Now, of course you’re asked difficult questions. In terms of preparing kids for the real world, and authentically assessing their ability to operate in computer science, I tell you what, most computer scientists do not lock themselves in a room with a piece of paper. They email their mates, they steal code off the internet, they leverage value out of their social networks, and this assessment allows you to see how good your kids are at doing that sort of thing. Moving to a bring your own technology approach as Tasmania did, is probably one of the most likely strategies for dealing with that problem of having enough computers available for every child in terminal assessment to be using technology at one time. So that’s part of the solution.

We’ve then got companies like BTL doing a lot of work in the background about some of the other technological and infrastructure and procedural and risk management issues. And we already have a system in the UK where quite a large number of student every year actually use digital technology for their assessment. Kids labelled as having ‘special needs’ for whatever reason are allowed to use digital technology to assist them, and indeed the regulations say that children should be assessed in a way that’s appropriate to the way that they’ve learnt. If you think about those kids who are in those schools I described who are doing radical stuff with new technology, who stopped for three months and went back to paper-based, I think they weren’t being assessed in a way that they were being taught initially, and they were being disadvantaged by the system.

How can we justify, how can we claim that our assessment is valid if it’s paper based, in a world where almost nothing else is? Now, I bet that you guys, some of the guys who were speaking had paper, but I bet they didn’t handwrite their speeches. They did it on these and then printed them out. Okay, so what I’m saying is that I think we have a lot of things in place that would allow us to move forward if we had the political will, and that’s the real killer. So the recommendations that

ETAG came up with in relation to assessment was specifically that the DFE should put in place a strategic goal for general qualifications to move to being technology-enabled across the majority of subjects including the core subjects, that the DFE and OFQUAL should actively encourage and support awarding bodies in moving towards e-assessment for general qualifications, and that the JCQ should put in place a framework for how e-assessments could be carried out in general qualifications to try and make sure that it's consistent and that it worked with other models across the piece. If these recommendations were implemented, we would make rapid progress, and the great work that BTL and others are doing could really have a major impact in schools. It could help us to get back up there as world leaders in education; but more importantly, it could make schools more relevant to the real world and the learners within them.

So, my kind of call to action to you is go back to wherever you've come from, download the ETAG report, type 'etag.report' into your browser and the report will pop up, read through the recommendations (it's only very short), and then really lobby to get them implemented.