

Assessment for the digital age

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Much has been claimed for ICT in education – from the end of schools to a complete change in every process of education – on a par with what has happened to banking. But it seems the revolution is a long time coming, so while we are waiting perhaps we had better look to evolution.

I want to look here at the specific question of whether the kinds of learning that either require or are supported by the use of these technologies are being captured and credited through high-stakes assessment – assessment marking the end of key stages or qualifications. When looking at the relationship between ICT and assessment there tend to be three main interest groups. The first of these wants to look at the use of the toolset that is ICT and certify how competent users are with it. Whether or not this should be the object of study and a separate assessment is a complex argument, and is being addressed by the new key stage 3 strategies.

The other two interest groups are:

- those who want to carry on accrediting much the same outcomes as before, but have some notion that using ICT in the learning process will enhance traditional outcomes
- those who believe that once you bring significant use of ICT into learning there are major shifts and you have to change the things you credit as learning achievement.

As a technophile I want to believe we should be heading swiftly to the second, but the rational researcher in me knows that the case for the first is largely

unproven one way or the other. Large-scale studies suggest that high levels of ICT in the classroom do not harm high stakes test results, but neither do they make major impacts. It's also noticeable that the high levels in these studies do not amount to much. Even in the best-equipped state schools children are unlikely to use ICT more than 15 per cent of the time, and in BECTA's ImpaCT2 study the students themselves rated their level of ICT use in school subject lessons as 'hardly ever'.

More worrying is the study that suggests that those who use ICT at a genuinely high level – usually using technology outside the school setting – are underperforming in high stakes test as a result.ⁱ However that seems to be at odds with the ImpaCT2 finding that high levels of home use of ICT correlated well with success in school. Closer scrutiny of the two studies suggests that this is more complex than it looks. Children with high levels of home use tend to be generally advantaged culturally and more likely to succeed in school and even if they do well, their grades may still under-represent their true competence levels. It is these studies that, to me, are the most compelling in the 'Does ICT do something different?' debate.

In a recent special issue of *Assessment in education*ⁱⁱ I invited a number of the world's leading authorities in assessment to discuss their work with digital technologies in the light of this debate. Their work includes investigations of the role of the computer as a vehicle for assessment, sometimes in an attempt to capture alternative learning outcomes to those traditionally recognised. As the use of digital technologies evolves and influences the ways we express and communicate both information and knowledge, the implications for assessment become more pressing.

It is noticeable that all the authors, to a greater or lesser extent, addressed the

way in which assessment shapes the curriculum. There is a recognition of the phenomenon of 'teaching to the test' and the subsequent damage that poor tests (or tests that credit only a restricted range of valuable learning) can do to education. There is also a common view that the advent of digital technologies has led to a shift in emphasis, or even a complete change, in the set of skills that will serve pupils well when they enter the world of work. Key learning outcomes are seen as skills rather than knowledge, and pupils require a dynamic environment in which to capture the practice of these skills in action. It is also important to identify common aspects of these processes and distinguish them from other context-dependent factors such as subject knowledge or ability to use technology, that may affect the ability to complete the task.

Most examples tend to use some kind of task-based approach. Some of these could be executed in traditional media; others, however, depend on a dynamic environment that offers responses to student input, or captures student input and can only be implemented using a computer-based environment. At the same time it is recognised that this approach represents a major change in most national school systems. Since school systems are essentially evolutionary rather than revolutionary a strategy is needed to ease the move towards a more skills-based approach and work at the University of Cambridge Local Examination Syndicate suggests computer-based assessments as a vehicle.

Equity and standards issues suggest that the safest route to progress is to computerise conventional tests. Early attempts to computerise assessment tended towards the automation of objective tests – the most obvious example being multiple-choice items. Raikes and Hardingⁱⁱⁱ map routes for progress towards the computerisation of

more complex, and traditionally more subjective, assessments without losing reliability, validity or public confidence. This includes trials of systems that combine computer- and human-marked elements, as well as options for paper or computer-based choices within a syllabus. Trials of two high-stakes examinations that have been successfully computerised include:

- a skills-based ICT assessment where candidates' end products are marked using a rule-based engine
- a simulation of a science practical.

This latter approach begins to open up an opportunity to give credit for process skills rather than just outcomes.

There seems to be a consensus among test developers around the world that changes to the administration of external assessments could bring about significant changes in the way assessments are used. Although this would result in few changes in subject content, it would involve a shift of emphasis towards how teachers teach

and how learners demonstrate what they know. Robust, reliable, scalable high-stakes assessments could challenge the grip of paper-based testing that currently chokes much that is innovative in the use of ICT in our schools.

The high and growing levels of ICT awareness in their world beyond school suggests that the majority of pupils are ready and eager to participate in this change. This modest but highly significant approach to systemic change may not satisfy those who would like to see a revolution in our schools on the back of the digital age, but it might provide a realistic vision of how we proceed from where we are in the essentially conservative school system, to a position that is better at recognising and nurturing the skills our children need and want.

Notes

- i Russell, M, and Haney, W, *Bridging the gap between testing and technology in schools*, Education policy analysis archives, volume 8, 19, 2000
- ii McFarlane, A. E, *Assessment for the digital age*, Assessment in education, volume 10, 3, ed. 2003

- iii Raikes, N, and Harding, R, *The horseless carriage stage: replacing conventional measures in assessment in education*, Assessment in Education volume 10, 3, 2003

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