

Working on the right track

Words **Julie Nightingale** Illustration **Gary Sawyer**

Technology can assess pupils in such a way to identify where they are going wrong, put them in the right direction or send them along a different route. So how does it work in practice?

ICT is perennially touted as the cure for many education ills, but is it all it's cracked up to be when it comes to assessment? Some experts say the answer is an unequivocal yes. Tools that support this approach can offer teachers and others the chance to turn the assessment process into a deconstruction of how a child learns and signal the direction they need to take next.

This technology is making the whole process of assessment much more efficient and, potentially, fun, says Jackie Bawden, head of assessment for Harcourt, which publishes e-learning and assessment tools and resources. They include Achieve, an interactive, online assessment system for Key Stage 3 that supports teachers and learners by identifying barriers to learning and improving performance.

"You can deliver instant feedback with ICT. You can identify strengths and weaknesses and next steps. It reduces the burden on teachers setting and marking assessments and allows them to focus on the outcomes – what the assessment tells them about their pupils. At the same time the pupil can have some fun, and as a result be more motivated about learning.

"There are also some areas you can't assess on paper anyway – and others that are better assessed on-screen. For example, describing how you use a calculator efficiently is very boring if you have to write down all the steps or key strokes you make but, if there's a calculator on screen, then the pupil can show how to use it by clicking on its different functions. You can also use video clips of experiments in which the pupil has to describe the processes at work or set up an experiment. You can assess the curriculum more widely."

Using an interactive whiteboard linked to the school's computer system adds another dimension.

Bawden says: "I used to dread going through exam papers with kids weeks after

the exam. With the whiteboard, you can pull out questions that several got wrong and look at them in class so that they are learning from the assessment."

A common fear among assessors is that electronic methods reshape the assessment process to suit the technology, the obvious culprit being multiple-choice questions. Bawden dismisses this notion.

"Multiple choice is by no means the only way things can be assessed on screen. There are really innovative tools you can use, such as e-drawing. Or you can use video clips with questions attached – an erupting volcano, for example, where pupils have to say at what point certain things have happened.

“**You can use videos with questions – say, a volcanic eruption where pupils have to say what is happening**”

"You can be creative in the way you assess and get the youngsters to be creative with their answers. You don't have to have questions where all the answers are on the page. They can work out fractions and equations and type it all in."

ICT also provides significant benefits for children with special needs, she adds. "In my experience of National Curriculum Tests

as a teacher, making children work on paper was a barrier. Using computers opens up access to many more pupils. For youngsters who have difficulty reading on-screen, for example, there are facilities for the questions to be read out to them using headphones. It's quite easy to convert into a stable format to be read out."

Adaptive advantage

ICT lends itself in particular to adaptive assessment – the non-linear way of assessing learning that captures a child's progression. As they advance through a task or set of activities, an adaptive assessment system will highlight where they stumble. Rather than accepting the failure, the child can be presented with another way of demonstrating their skills and knowledge.

"At the moment, assessment is 'one-size-fits-all'," Bawden says. "If you're at the lower end of the scale, you may be only able to do one-third of a test, whereas if you're at the other end, you won't be stretched enough.

"In summative assessment – the exam model – you would be given an average mark. You may get questions at level four and six right but 5 wrong, but your average would be a 5.

"Adaptive assessment will home in on each individual's learning needs and capture the progression of each child's learning."

One way to apply adaptive assessment would be to start off with a middle-level question and get harder or easier depending on what's required. Another is to pinpoint where the barriers are to a child's learning, for which you need a bespoke assessment.

"I would love to know what I did wrong in history, for example, when I was at school. If I'd known what the issues were, I'm sure it would have helped. There was a stumbling block somewhere in my learning. I'd love to have known what it was."

Peter O'Hagan, a director of education IT specialists Serco Learning, agrees. Adaptive



assessment has many advantages over other forms, he says.

"A simple example would be if a child cannot answer four multiplied by five correctly, rather than marking that as a failure, adaptive assessment would recognise it and present the task in another way – say, 'What is five multiplied by four?'"

The advantage is that it enables a child to demonstrate what they have learned – even if they have faltered at a particular task.

"One of the problems with our education system is that it is predicated on failure," says O'Hagan. "We encourage children to take part until they fail and we put people into categories from that point of failure – you are a level 4 or 5. What we should be doing is demonstrating youngsters' competencies in a particular area – you are a good historian or have scientific ability."

Technology is opening up new and powerful options for adaptive assessment, he adds. "The systems are supporting good teachers because good teachers do this intuitively; they ask the smart questions that allow the learner to demonstrate what they can do and what they know."

Systems in the US enable users to

identify and capture the problems that students encounter as they learn but then help them to overcome the difficulties. For example, there are online maths courses that track how a child learns, identify where they "fail" and bring in another approach.

"When all of the options in the particular programme that the child is using have been exhausted, the system can go online and 'poll' the internet to find other programmes that may help."

For subjects based on problem-solving, he says, these systems could be the answer pupils and teachers have been looking for.