

## Delivering eLearning across the Curriculum

By Mike Taylor, eLearning Director at Equiinet

More and more schools can now start using the internet to support their teaching as part of the government's target to get every school using broadband by summer 2006. But having broadband, while critical, is not the only thing schools need. Powerful eLearning content, and the tools that help deliver that content securely and quickly, are equally important. Having one without the other results in teachers gaining very little value in their classrooms.

The Education Minister Charles Clarke wants to see eLearning embedded in every subject at all key stages to make teaching more interactive and to broaden the resources available to teachers and pupils. Its use, often in conjunction with electronic whiteboards, has proven invaluable in re-awakening the enthusiasm of students and enabling teachers to deliver far more effective lessons. But all too often schools are waiting to afford these key items. They also find that the ICT curriculum monopolises the use of ICT suites, delaying the real benefits of eLearning in other curricula subjects like history, geography, maths or science.

In this article, we take a look at the funding that is being made available to schools, the strategies – or lack of them – being adopted across the country, and the infrastructure that needs to be put into place to ensure eLearning can be delivered effectively.

### Funding famine and feast

While great strides are being made to proliferate eLearning in schools, the availability of money is one of 'famine and feast'. Five years' worth of National Grid for Learning funding has been effective in moving towards the government's computer-to-pupil ratio targets – one for every eight pupils in primary schools, and one for every five in secondary schools.

Money has also been made available over the past four years to fund the rollout of broadband in schools. As a result, all secondary schools in England are broadband-connected. However just 30 per cent of primary schools are currently at the target of at least 2 megabytes (Mb) of bandwidth. The government has said that by summer 2006 all schools will have reached target. In reality, lots of primary schools may still be waiting when that day arrives, for many reasons – chief among them are logistics and location.

A new source of funding, eLearning Credits, is causing many schools a dilemma. The Government hoped that eLearning credits would be spent on online and rich media content products. However at least 75 per cent of what is available for schools to buy is still CD-ROM based. Schools have bought all the CD ROM content they can with their eLearning Credits, leaving the Government with a surplus of money that is not being used. Moreover, schools are not able to access higher quality content that is available online.

In addition, because online content is often too large to be delivered 'on demand' to the classroom, schools need a caching device that can allow multiple PCs to access the content at the same time. Teachers pre-planning lessons, can use a caching device to pre-load content overnight when the network is not being used so that the lesson is not delayed or affected when 20 or 30 children each try to browse or access the same web-page. The teacher can also control the web pages being viewed by pupils.

As essential as caching devices are to eLearning, the dilemma for schools is that the funding for these devices is rolled into a general infrastructure fund. This means it competes with other priorities like the need for more PCs for pupils or laptops for teachers. So while schools are awash with eLearning Credit funding for content, they struggle to afford the means to deliver it in the classroom.

And unless other mainstream curriculum subjects get regular access to computers and eLearning material, there is little impetus for them to think about integrating ICT into their teaching or buying the content they need to improve the way they deliver their lessons and pupils' understanding of the subjects.

It's evident that schools are not always able to make best use of the money that is being provided. Re-allocation or redefining the use of eLearning Credits would help schools to get the necessary infrastructure in place to deliver high quality content to the classroom.

### **Encouraging best practice**

In theory, there's nothing wrong with the structure that has been put in place to proliferate eLearning and the rollout of broadband in England. Ten regional broadband consortia (RBCs) represent the country's 150 or so Local Education Authorities, developing strategies and contracting suppliers to move the whole process forward.

Yet the system is flawed. Each group has taken a different approach to connecting schools to a broadband network, leading to plethora of solutions and wildly differing costs across the country. There is a clear need for the RBCs to build on the successes in some areas and encourage or develop this as a best practice example for other consortia.

One organisation that has been both dynamic and forward thinking in its approach is the Northern Grid for Learning, representing eight LEAs in the north-east of England. All schools in the Northern Grid region will have broadband connectivity by this summer, two years ahead of the government's target deadline.

At the same time, Northern Grid has foreseen that once schools have broadband, they will want to download multimedia content that will inevitably put a tremendous strain on this new bandwidth. Even with broadband, just five or six PCs simultaneously downloading video-based learning material can clog up the network if measures are not put in place to lessen the strain.

**Caching and content delivery**

Northern Grid recommended caching and content delivery devices to schools and LEAs in its region. With caching servers, curriculum-based websites and media rich content services are stored in the local device, based at the school. Content is delivered without need of the internet, and is updated overnight automatically.

Equiinet's CachePilot is the recommended solution in the Northern, London and East Midlands Grid regions. It ensures that bandwidth-intensive material is stored locally and updates to the content are sourced at off-peak times.

Northern Grid's CachePilot devices are supplied pre-loaded with the entire content suite from primary school eLearning specialists Espresso Education. An additional benefit is that teachers are able to 'pre-cache' curriculum based content prior to lessons, enabling them to plan lessons in advance and ensure that Internet access in the classroom is instant, no matter how many PCs are sourcing the same material.

**Proof it can be done - Education Action Zones**

Smart Learning Grids are not the only organisations to be demonstrating best practice in how they roll out broadband to schools. A few years ago, the government established several EAZs (Education Action Zones) to ensure infrastructure could be prioritised in areas that have extra need due to levels of social deprivation. As a result, many of these EAZs now have access to high quality content, abundant bandwidth, the necessary support infrastructure and IT-savvy teachers and pupils.

Pooltown Junior School in Ellesmere Port, Cheshire, is a good example of success within EAZs. The school has achieved a remarkable turnaround thanks largely to the installation of electronic whiteboards, the adoption of caching servers, and the training of teachers to make the most of online resources.

Teacher David Wearing describes the system as 'fantastic' and says that if any of his pupils find a subject difficult to understand, he and his fellow teachers can quickly source a video clip or interactive exercise that explains the subject far more effectively. He says the use of multimedia content on electronic whiteboards, engages and encourages children who were reluctant to contribute beforehand. They are much more inclined to raise their hands and take part.

Headteacher Amanda Whitley says that her teaching staff are absolutely thrilled by the more effective teaching that the whiteboards allow. "Our school is in a challenging area and some of our students are capable of challenging behaviour but since the whiteboards were put in our teachers have noticed a marked improvement in behaviour."

Pooltown's experience has been so positive that it is now seen as a county-wide pilot for such innovative teaching methods. Parents, governors and PTA members from other Cheshire schools have visited on numerous occasions to see the system for themselves.

### **Conclusion**

Schools and LEAs can learn much from the results achieved by the Northern Grid and Ellesmere Port EAZ. Progressive thinking and smart planning has unleashed the boundless potential of broadband internet access. With some redefinition of the way that the eLearning Credits can be used by schools, there will be little to stand in the way of the Government's target for broadband and the way that schools and their pupils can benefit from broadband access will be optimised.

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