Universities adapt to a shrinking world

As technology gives distance learners easier access to their institutions, it is helping campus-based students to study on the move. Stephen Hoare checks out the leading platforms behind this convergence

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The distinction between distance learning and studying on campus is becoming increasingly artificial. While providers of distance learning such as the Open University are boosting the quantity and quality of face-to-face seminars, traditional bricks-and-mortar institutions are supporting students on and off campus through virtual learning environments (VLEs) based on commercial or open access platforms.

Universities now operate learning platforms on which students access multimedia course material and self-study tutorials online. The platforms - in effect, giant online libraries - might also include student bulletin boards and forums as well as chat rooms that can be used by staff and students to supplement tutorials. Peter Scott, head of new media at the Open University's Knowledge Media Institute, says: "These technologies are enhancing traditional face-to-face contact, rather than replacing it. At the OU we call our offering 'rich blended learning'."

The Joint Information Systems Committee (Jisc), which supports the use of ICT in colleges and universities, says it treats distance learning as e-learning. "All learners are becoming distance learners, because they are increasingly working from home or on the move. We are looking at platforms such as personal digital assistants, mobile phones and iPods," says communications manager for Jisc, Dr Philip Pothen.

Indeed, the UK's first podcast study support material is about to be published. The EBS Trust has developed a multimedia maths programme, Maths Tutor, on seven DVDs. Two-minute tutorials on subjects such as Pythagoras' theorem can be downloaded to an iPod.

Leicester University's e-learning project, Leicester Online, is finding a common technology that will improve the learning experience for distance and campus-based students. Leicester Online will be available to all students and includes a digital library, administration, counselling and study support. All students on campus have broadband access in study bedrooms and the library.

"My remit is to introduce e-learning across the board," says Leicester Online's director, Professor Gilly Salmon. "If you separate out distance learning completely, you will not be benefiting either the distance or the full-time students."

Leicester broadens its net

As a traditional, research-led, campus university, Leicester has 11,000 full-time students and 7,000 distance learners in areas such as the Far East, the Middle East and the Caribbean. As tuition fees rise, the growth in distance learning is seen as a way of widening participation. It could become increasingly important for domestic students wanting part-time, flexible study options.

"Our distance learning happened as a result of entrepreneurial activity over many years," says Salmon. "As you begin to scale up, you are having to develop the technology to pull it all together."

Leicester uses a proprietary VLE called Blackboard, which merged with its main rival, Web CT, last November. The university's medical school uses another commercial platform, developed by Tribal.

Salmon compares the systems: "We like Blackboard because it is a very easy platform to use - for anything from announcements, resources online, student bulletin boards and forums and links to the library for people doing entirely online courses. Tribal needs more central support."

She explains that having a proprietary system frees staff to become more productive or take on greater responsibilities. "John Fothergill, our pro vice-chancellor, uses Blackboard to talk to his students. He no longer has time for personal tutorials, but the students are very happy because they can contact him at any time."

Some universities, however, are moving away from costly commercial systems to more flexible, open-access systems, such as Moodle and Boddingtons, which are based on free software and shared content. The trend is towards greater collaboration and cost-sharing between institutions. Moodle has been described as a solid system that allows academics to structure courses and to add multimedia content.

Jisc is putting its weight behind Shibboleth, a newly developed access management system that comes from the US. The platform's advantages are that it is single sign-on and gives students access to the complete range of virtual and managed learning environments and learning resources across the worldwide academic community. Jisc has negotiated licences for around 200 commercial resources, access to which will be free for UK full-time and distance learning students.

"Shibboleth is becoming the international standard and is the platform we are endorsing," says Pothen. "We are funding a range of early-adopter projects in further and higher education to test it. From next year we will be using it for access management. We wanted to make as much content available as possible to distance learners - all learners."

Moving to Moodle

The Open University is switching its VLE from Blackboard and Web CT to the open access system Moodle. "We are moving to Moodle because it is an open-source, open-

tools, collaborative environment," says the OU's Peter Scott. "The market for VLEs is being driven by universities and by students and their requirements."

He anticipates that cutting-edge web technology will vastly improve the storage capacity of VLEs and enable a better interaction with the student. This is why the OU has begun organising content into databases that will facilitate sophisticated research.

"We generate data so that students can search for meaning rather than content and syntax," says Scott. "It is called semantic web research and is very different from web-page formatting on HTML. A semantic-based system is a lot more powerful. Much of the groundwork is going on at the world wide web consortium headed by Tim Berners-Lee." Moodle may not provide the entire answer but its design is moving in the same direction as OU's semantic web research.

Anglia Polytechnic University's Ultralab, another leading research institution in new media, is also a strong advocate of open-access platforms. It has developed a completely online distance-learning degree - the BA (Hons) Learning Technology Research - delivered through its online arm, Ultraversity.

Ultraversity is experimenting with a range of open-access platforms alongside learning management software it has developed in house. Plone, for example, is a new system that enables Ultraversity students to organise their e-portfolios, while Hot Seat is an asynchronous, topic-based discussion forum led by an academic who is an expert in a particular field.

Ultraversity project leader Stephen Powell reckons these tools could soon become much more widespread. "No one else is using Hot Seat," he says. "It is a concept that all universities have picked up on - having the expert enter your community. The strength of it being asynchronous is that Hot Seat opens up learning to people who wouldn't otherwise be able to access it."

But Powell is unwilling to commit to one system. "The world is awash with open-source VLEs. The universities that develop them are pushing them as open source. The software is free but they want other people to come in and help fund the development costs. For example, Sakai, the new kid on the block, has been pump-primed by US universities. Boddington has come out of Leeds University."

While acknowledging that Moodle is the strongest of the bunch, Powell sees disadvantages: "We did think about using Moodle and we carried out an evaluation. Moodle is very, very structured. It is fine for a fixed course over a fixed time, but with our particular programme and our type of students we needed something a lot more flexible."

Low-cost videoconferencing

New media lecturer Steven Verjans from Leuven University, Belgium, is part of an Open University pilot to trial two new internet-based videoconferencing tools. He is using Flash Meeting, a flexible, low-cost, internet-based videoconferencing tool to deliver in-service training for university lecturers, and Hexagon for student support.

"By the end of the eight-week course on e-learning our lecturers had become fervent adopters of Flash Meeting," says Verjans. "They are using it for a range of purposes, from running international masters programmes, conducting interviews with academics in Africa, student supervision and counselling, to organising overseas exchanges. All you need is a microphone, a webcam and a PC. This is a flexible tool when full-blown videoconferencing is not feasible."

Old-style videoconferencing never really caught on in universities as it was too clunky. Barriers to use were the difficulties of gathering a group of people at a pre-arranged time along with the cost of setting up a studio.

Peter Scott, head of new media at the OU's Knowledge Media Institute, believes universities need flexible, low-cost solutions. "Flash Meeting will give you a conference any time, any place, on any platform without needing to download anything extra for it to work. With Hexagon you can drop in on people, see them at work and have a chat. A student could see his tutor, for example."

Scott believes small-scale, niche applications are the way ahead for videoconferencing, which has become bogged down by costly technology. Flash Meeting and Hexagon use voice over internet protocol (Voip) technology to create an audio-visual instant-messaging system that can support small groups of distance learners and provide an alternative to face-to-face tutorials.

He invites me to log into the Hexagon website to see him in his virtual office. The home page is a honeycomb of updating thumbnail images, each representing an individual room. I quickly find Scott's room and click to enter. As we chat, he manipulates the webcam and zooms in on a whiteboard used for student tutorials. Up to 30 users can videoconference in a room at any one time.

Nick Hine, director of applied computing at Dundee University, is also taking part in the OU pilot. Dundee is using the technology for an international language project and for a schools field trip project.

"Flash Meeting is a more generic tool," says Hine. "You can have one-to-one sessions or you can configure it for small or large groups. It's a user-friendly technology that we can use with researchers working in different countries. Hexagon is a collaborative working tool. You could use it for student support or to keep teams of researchers close to each other."

But there other options that universities could use for small-scale videoconferencing. Ultraversity uses commercially available products to help boost student communication and to hold the occasional tutorial. "Apple's iChat enables you to conference with a group of four people over the internet via a webcam," says Powell. "It makes videoconferencing feasible on a small scale."

Much more ambitious and far better resourced, the Joint Information Systems Committee (Jisc) has joined forces with several UK research councils to develop Access Grid, a system based on multiple video-streaming that allows users to access and swap software. Jisc's Philp Pothen says: "Access Grid is much more than a videoconferencing system. It has just been launched, but already three or four universities are using it."