# New ways to digest the curriculum

Students now ingest media differently than they did in the past and higher education institutions are adapting to these new methods. But are they matching student expectations with the technology available, writes *Paul Bray*.

We go to university to get new perspectives on life, but these can sometimes be scary. It must warm the cockles of a professor's heart, for example, to see students beavering away on their laptops during lectures, eager to capture every pearl of wisdom. But if only they could see the picture from the other side, it would more likely freeze their blood.

"I sometimes record in-class lectures from the back of a classroom, and I'll often see a sea of students on their laptops shopping on Amazon for shoes, writing emails and checking their social media feeds," says Gary San Angel, a distance education specialist at the Keck School of Medicine, University of Southern California. "They're simply bored – not because they don't want to learn, but because professors still haven't adapted to the way students ingest content and new media."

This would have been depressing enough in the old days, when higher education (HE) was free (at least in the UK) and regarded as a privilege. But now many students are customers, often paying tens of thousands for their education, and not unreasonably they want customer satisfaction.

"The main driver for technology in higher education is student expectation," says Jon Garaway, education account manager at NEC Display Solutions. "Arriving at university with a

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**Aidan Crowe**

smartphone, tablet, laptop and maybe a PC, students expect instant online access to resources. Informal collaborative learning is becoming standard in many universities because it meets the way students want to learn, with social interactions as part of their learning process at a time and place that suits them.

"Universities today tend to talk less about academic results and more about their student experience ratings. So while they are looking to AV to support the learning process, what's ultimately at stake is the student experience which leads to increased student numbers."

This is compounded by intense competition for students' cash. "We're almost at the bottom of a long demographic decline which has impacted sharply on UK university admissions, so the short-term challenge is to maintain student numbers and the income from undergraduate fees," says Phil Waterhouse, business development manager at Technological Innovations Group (TIG). "That

means investment in new buildings, new technology and improved ways of teaching and learning."

Up-do-date technology creates the right vibes among prospective recruits. "Visiting a university can be daunting for a 17 or 18-year-old, so a lecture theatre or teaching space that's bright, modern and has the latest tech puts them at ease because that's what they're used to and expect," says Waterhouse. "Good tech is a huge attraction in terms of choosing where to study."

Another incentive to providing cutting-edge technology is students' desire to become familiar with the kind of equipment and software they will meet when they graduate and enter the world of work, adds Richard Rutty, head of audio visual at specialist HE integrator, Stone Group.

Competition to attract the best students is directly driving investment in AV. "We're seeing interest from universities wanting to replace projectors with LED walls in lecture theatres," says Aidan Crowe, group sales manager at integrator, Pure Audio Visual. "Acoustics and audio reproduction are a higher priority because speech intelligibility is so important. There's a big push towards small collaboration spaces where staff and students can collaborate and use web conferencing technology to bring in remote colleagues, peers and experts. And there's a degree of investment in simulation suites designed to bring an additional layer of reality to the learning experience."

**Impressive and user-friendly technology is a huge attraction for students when choosing where to study**

The student-centric approach influences the whole HE offering, which is being redefined to fit today's student lifestyle, argues Garaway. "By allowing students to work to their own schedule, HE institutions are using AV to enable greater engagement, which means access to teaching material any time, from any place. Universities need to acknowledge this desire for more flexible ways of learning with appropriate services. Libraries, for instance, are often accessible 24/7, meaning the technology must also be capable of 24/7 performance."

## Students at the heart of technology

Student-centrism dovetails with another of the major HE trends of recent years, the shift from the traditional 'I talk, you listen' lecture to a more collaborative and interactive approach, often summarised as 'active learning'. Its origins predate the arrival of collaborative technology and the student-as-customer, but these have almost certainly added to both the desire and the ability to deliver

"Active learning puts students at the heart of the learning experience, encouraging them to be engaged in the learning process as opposed to just sitting and listening or reading textbooks," says Dave Kenworthy, director of digital services at CoSector – University of London.

"It can help students achieve a far deeper understanding of a topic, and for lecturers it provides more opportunities to interact with students and get continual feedback to evaluate their teaching. Active learning can include group discussions, student presentations, role-play and techniques such as flipped learning, which reverses the traditional learning environment by delivering instructional content often online and off-campus. It also moves other activities, including those that may have traditionally been considered independent work, into the teaching space."

Despite its popularity, active learning can present challenges for AV suppliers. "As an integrator it's important to delve a bit deeper into the expected user experience," says Crowe. "Active learning can mean different things not just between institutions but even between departments. In all cases, variety seems key. A move away from a singular approach to the learning experience is increasingly commonplace, as demand for informal group working areas,

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collaborative teaching spaces and traditional lecture theatres with lecture capture and broadcast capabilities continues to be strong."

Active learning may also necessitate a revamp of existing AV installations, warns Brad Price, senior product manager at Audinate. It turns the tables on the old one-person-speaks-to-many legacy AV model, requiring multi-channel, bidirectional systems that allow a large number of participants to easily exchange media (audio, video, presentations) with others in realtime. This means that participants – both students and instructors – must be able to take control over part of the system in order to present, listen and collaborate.

"These requirements mean it's very difficult and expensive to repurpose older, hard-wired, point-to-point AV systems for active learning. Educational institutions must work with AV integrators to devise systems from the ground up that accommodate this new model of use," he says. "While this might inherently seem to lead to more complex systems, ease of use will be paramount as the system operators will now be nearly everybody in the classroom or lecture hall."

Software-driven, networked AV can provide the necessary flexibility and ease of use, Price adds.

As well as turning traditional teaching models on their heads, new technology is increasingly allowing teaching and learning to become distinct from the four walls within which they take place – a neatly cerebral concept for a seat of knowledge, perhaps.

"Our digital strategy talks about us being an 'edgeless' university," says Paul Westmore, IT director at the University of Plymouth. "This is our vision that students and staff can experience university entirely digitally if they want to. We don't force digital interaction or say you have to do everything digitally, but the intention is that you can interact entirely digitally with the university if you wish."

"By using digital learning environments (DLEs), teachers can share classroom material online, so they and their students can access work wherever and whenever they need to," says Kenworthy. "This also enables educators to track progression and understanding. If a learner appears to be struggling, for example, lecturers can discreetly monitor and address the issue."

## Infrastructure overhaul

Creating a more connected online environment is now a major investment focus, according to Garaway. "Many universities are moving to a completely digitised infrastructure using AV over IP to network resources and enable realtime access. By networking the entire estate, students can access resources 24/7 while the university can maintain control of its digital assets and gain operational efficiencies."

New technology enables the learning experience to be extended far beyond the physical campus. "Many universities have a global outreach with students in other countries, and digitisation and remote collaboration tools assist in maintaining close links across faculties and forging cooperation with business," says Garaway. "Heriot-Watt University in Edinburgh recently opened its new **»**