



Bringing Learning
Space Toolkit to life

Be alert to
'people hackers'

Hidden values of
'forgotten corners'

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Forward-looking SCHOMS breaks out

LEARNING space and technology professionals broke out from their daily roles at universities across the country to attend the SCHOMS17 conference at Keele University - and breakout spaces formed one of the main talking points.

Architect Amy Butt pointed to the part played by breakout spaces in environments for massive open social learning and event space learning at Middlesex University (page 2).

The Open University's Rosie Jones also spelled out their value in her talk on designing innovative spaces (page 11).

And the emergence of breakout spaces was covered in a discussion hosted by co-presenters Dr Caroline Paradise and Eleanor Magennis on the second phase of SCHOMS' groundbreaking learning spaces toolkit produced in collaboration with AUDE and UCISA (page 4).

SCHOMS17 was attended by 61 delegates from 46 UK institutions - including first-time members from De Montfort University and overseas visitors from Malta, Australia and the United States.

The conference again played host to the UK's largest suppliers exhibition with an HE focus (page 12).

The conference app was sponsored by Echo 360, the Tuesday night dinner by Panasonic and the following night's conference dinner drinks by MediaSite.



Conference venue Keele University as captured by AETM visitor and speaker Dave Rigter. Read what he had to say about AV changes at his native university (page 10).



Delegates visiting the Keele Active Virtual Environment in the School of Pharmacy as captured by speaker Adam Harvey. Adam presented on a ground-breaking project at his own University of Hertfordshire (page 6).

Make a date **SCHOMS18** University of York

Preparing students for different world

In his conference welcome, Keele University's Vice Chancellor, Professor Trevor McMillan, said the SCHOMS17 agenda would help to 'form an important base' in discussing how students and staff were going to adapt to change and be aware of new opportunities.

SIMILARITIES between the world today and the year that Keele University was formed in 1949 were highlighted by Professor McMillan in his opening remarks.

"Keele was founded at a time of great uncertainty in society about what was happening globally," he said. "I feel we're in a world like that now - questioning where the UK fits and what we need to do to prepare our students for a world that will be very, very different."

He also spoke of how technology presented challenges to Keele's celebrated sense of community.

"We very much see ourselves as a university doing high quality world class research in fairly focused areas alongside a very student focused approach," he said.

Keele had topped a national student satisfaction survey for three years running and regarded the relationship between staff and students as 'absolutely key'.

"As we want to become more efficient, the challenge will be to introduce technology without losing that sense of community.

"Introducing it is not the hardest part, it's the effects on the culture and people around it."

He said the big question facing everyone was how to be more disruptive and do very different things - "not just improve a little on what we do now."

How 'every forgotten corner' can be a learning resource

INNOVATIVE use of 'slack' spaces between primary function spaces were celebrated by architect Amy Butt in her account of far-reaching £200m development work at Middlesex University.

Amy used three case studies - The College building and quadrangle, The Grove art design and media centre and the Ritterman science and technology building - to describe the scale and aims of the work.

The College and the Grove were included in a £200m consolidation strategy - incorporating 17 campuses across five boroughs into a single campus at Hendon, a move which saw student numbers rise from 7,500 to over 20,000.

The Ritterman was a new-build project bringing together staff and students from two distinctly different faculties - arts and the creative industries, and science and technology - over 3,300 sq metres of new teaching space.

All three were required to focus on two modes of teaching and learning:

- Massive open social learning - informal spaces and networked environments that encourage collaboration and discussions.
- Event space learning - which enables participation and embedded learning through a memorable event like a fashion show or large scale engineering build project.

"We were asked how our designs and spaces were going to implement these shifts," she said.

But she told delegates that the most innovative and inspiring aspect came from unallocated 'slack' spaces between distinct functional spaces.

"Within every campus there are existing spaces which, to varying



Practising architect Amy Butt - who is also a lecturer and design tutor in architecture at Brighton University, a guest lecturer at Newcastle University and Westminster University and an independent researcher - spoke on 'Innovative Pedagogies in Practice - Lessons from the Left-over Space'.

degrees of success, embody some of the principles," she said. "While they may not have been developed as innovative spaces, staff and students have been using them as such."

The College building dated back to the 1930s and featured a library and 'chalk and talk' spaces surrounding an underused quadrangle. The library was moved to a new purpose-built home and a striking focal point was created at the entrance of the campus by remodelling the quadrangle and covering it with a glazed roof.

Teaching was boosted by new services distributions and refreshed rooms around the perimeter block.

"But the 'leftover' quadrangle space between these functional and timetabled spaces supported far more innovative approaches to teaching and learning," Amy said.

Semi-formal space within the open plan area supported networked learning. "Initially, staff and students

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skirted around it uncertain of modes of conduct," Amy said, "but a new cohort of students took ownership of it.

"It often surprises me how this space can be packed and noisy but is still a favoured setting for staff meetings. The formality of the grand architectural building is coupled with informality of seating which allows it to perform as an 'in-between' space.

"It's been used for numerous events including welcome week fairs, open days, music recitals, award ceremonies and fashion shows."

While the key aim of the £36m **Grove art design and media centre** was the relocation of teaching facilities - providing a vast array of specialist spaces from fine art, fashion, textiles, jewellery, ceramics and sculpture to digital media and animation, architecture, metalworks and 3D printing - there was also a requirement for breakout 'slack' spaces to embrace future change.

"It was to be a space that supported reconfiguration and occupation, that could be transformed by installations and support different uses such as art installations and fashion shows."

Media services technical staff worked with the estates team on AV/IT specifications within the atrium.

The TV studio was fitted out and networked into remote recording facilities in the recital and dance practice rooms and across other sites. Media could be relayed to TV screens across the building including the atrium.

"The atrium has been extensively

// The 'leftover' quadrangle space between functional and timetabled spaces supported far more innovative approaches to teaching and learning //

used by staff and students for events based learning from formal presentations to creative end-of-year shows," said Amy.

"Students can use their own devices in smaller breakout spaces. External seating, expanded corridors, informal meeting spaces off circulation routes and smaller atria are used for group discussions."

Small hubs of furniture around desktops have also been introduced so students can access IT services outside of IT suites or the library.

"It's the variety and availability of these smaller spaces that has allowed the Grove and the College building to succeed," said Amy.

The £18m new-build **Ritterman Building** was designed to be highly adaptable because of the need to bring together the widely contrasting faculties of arts and the creative industries and of science and technology.

"It ranges from small changes that can be made in a few moments to larger changes that might require significant building works," Amy said.

Good floor-to-ceiling heights allowed for the provision of future AV equipment.

Layout has allowed science and technology to create lab hubs but function equally well as a series of traditional seminar teaching spaces.

"Rather than seeing teaching strategies as new facilities to be provided, they also provide a new way of thinking about leftover spaces, a way of optimising efficiency of existing buildings," Amy said.

In the Ritterman an unallocated space grew off one of the main circulation routes to the fabrication lab and mechatronics areas.

"There was a briefing requirement for a lab hub space with small presentation area which could be used for breakout discussions. It could also be used by graduates to share research work.

"It's a low-cost furniture solution with integrated services and has been enthusiastically received by staff and students.

"The most innovative uses of the buildings will be the ones we haven't thought of yet."

Amy said the challenge in creating university estates was to ask how the built environment could effectively contribute to high quality learning.

"Supportive spaces that create links between existing modes of thinking and practice don't necessarily need to be demonstrated in new-build space.

"We should aim to support and inspire staff in the delivery of teaching and learning. That might mean new-build specialist facilities, but it also means providing breakout spaces for work-in-progress to be shared, fostering event space learning, or informal spaces for chance encounter, appropriately networked to support massive open social learning.

"It means making the best of the assets already in place in our estates, including the knowledge and creativity of the staff and students, and working with them to consider how every forgotten corner can become a learning resource."



College building

// Rather than seeing teaching strategies as new facilities to be provided, they also provide a new way of thinking about leftover spaces, a way of optimising efficiency of existing buildings //

Putting life into the Learning Space Toolkit



Dr Caroline Paradise (left) and Eleanor McGennis presented plans for the second phase of the learning space toolkit - a landmark collaboration between SCHOMS, AUDE and UCISA. Caroline is Head of Research Design at Atkins Global. Eleanor is Project Development Manager at the University of Glasgow where she is rolling out an 'Inspiring Spaces' policy and developing a number of projects as part of their £1 billion estates strategy.

VIEWS were sought at SCHOMS17 on the next steps forward for the groundbreaking learning spaces toolkit produced in collaboration with AUDE and UCISA.

SCHOMS bursary funds have been provided for a second phase which, Eleanor McGennis told delegates, aimed to "bring it to life" and make the toolkit user-friendly.

Co-presenter Caroline Paradise - chair of the second phase - added that the focus would be to capture more examples of spaces and people's experiences of going through the process.

"We're keen to talk to as many people as possible who are involved in case study projects," she said. "It's the only way we're really going to understand the impact of learning spaces. We're looking for observations of space in use and to capture videos, imagery and hold interviews with key stakeholders."

Caroline said she was working with JISC on how to make the information more interactive and searchable on its hosted website. SCONUL and HELF had also been added to the group of organisations involved.

"It's the first time we're seeing something that brings all these organisations together," she said.

"With JISC, we're trying to develop a 'two-way look' at case studies from project inception through to space-in-use capturing all the chapters the toolkit provides," she said. "This would allow users to go through from beginning to end or go into a chapter to see how a case study worked."

The information would be provided in four categories.

- 'Didactic' teaching spaces - "the learning landscape is changing but it's still important to highlight this."
- Group learning - can range massively, from lecture theatre to much smaller learning.

- Social learning - "an increasing part of student learning experience. We need to look at the range, whether commons, students union, in-between cafe spaces."

- Specialist spaces like STEM labs.

"It's important to capture the range of size and scale of institutions, the variety of new builds and refurbishments and perhaps smaller projects that present good lessons to be learned," Caroline said.

"We're looking for big ideas but also the small tweaks and tricks - often refurbishing a room with not much money - that other people could learn from in the whole process of the project."

Eleanor added that a student researcher sponsored by SCHOMS funding had prepared a questionnaire based on chapters from the toolkit that would be distributed shortly to key contacts at the selected case studies.

"We're also likely to have additional funding from AUDE, HEDQF and SCONUL to help us visit the institutions," Caroline said.

It was hoped the second phase would be delivered by the end of the calendar year and to make a presentation summary available for distribution at conferences.

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How toolkit helped to shape a learning spaces project at Glasgow

ELEANOR described how she used the toolkit in a learning spaces project at the University of Glasgow.

"Academics wanted to do flip teaching, to co-create material with students and use technology to help with that in general teaching pilot spaces," she said.

Eleanor looked to the 'Working in

Partnership' toolkit guidance and held an early event involving academics, consultants and technology suppliers.

- In accordance with 'Managing the Learning Space Project' she spent a lot of time considering the nine pilot rooms and envisioning them differently. "Academics valued that it

wasn't process driven at early stage," she said.

- 'Evaluation' - she linked the project to student employability.
- Following the advice on 'Change Management and Transition' she ran sessions for academics to help them develop the skills to use the space.

Hacking is all in the mind for social engineering specialist

HACKING is big news. Organisations spend millions on anti-virus software to maintain cyber security. But Jenny Radcliffe's sobering message to SCHOMS17 was that hacking is not always about technology and computers. Humans can be hacked too.

"I'm a non-technical hacker," she told Connections in an interview after her presentation at Keele University. "I'm the least technical person in the room."

"But I can still get into any company I choose to get in by working with people's heads and brains."

"Hackers are like that, manipulating people to give information that it's not in their interests to do so. I've learned how to persuade and influence people, to get people to drop their guard."

"There's no point organisations investing in cyber security if we forget humans. We can be persuaded or bribed to give a password or click a link."

The security term for human hacking is social engineering - and Jenny is hired by companies wanting to test their security by asking her to replicate a malicious social engineering attack.

On her website, she describes it as *"the manipulation of a person or persons through psychological or non-technical means, in order to gain access to finance, data, information or even physical access to premises or goods. It is a 'people hack' because it uses human beings rather than technology as the basis for an attack."*

"With social engineering, there is always human contact at some point," she said. "It could be someone on the inside, a malicious attacker or me."

She put forward the example of the 'disenchanted' — employees who feel undervalued, put-upon or just disgruntled, filing them under the threat headings of "mistake, mischief or malice".

"We profile the company and its key individuals, the people to approach to get into the organisation. If you have 200 employees, there are 200 potential ways in; if



Jenny Radcliffe is a consultant, trainer and public speaker. She specialises in social engineering, non-verbal communications, advanced negotiations, deception, security and supply chain work. She assists a large number of global clients. 'Human Hacking: How Social Engineers are bypassing your tech, your security and your brain, and what you can do about it.'

you have 2,000 employees, there are 2,000 potential ways in.

"We report to the company on what we found out and how, what they fell for and how to patch it up."

Psychological hacking could often be part of a bigger hack, Jenny added.

She demonstrated to delegates how individuals could be hacked through social media using the fictional case studies of Marge Simpson, a woman hidden on social media but who could be traced through her son, Bart, and of a company bigshot she called Moby Dick.

"He doesn't use social media but we can still get to him," Jenny said. "He supports a charity and we can attend a charity event and ask his wife if we can interview there or at his office."

"We can build up profiles of businesses through family and connections. Hacking can be done through personal information every bit as much as technology."

Jenny's key message to delegates was not to think they didn't matter or it didn't affect them - and not to make it easy.

"People feel they're not important or rich enough to be hacked. Make it difficult. Be careful about information being provided. Don't put information online if you don't have to. All individuals should protect against it."

"We want to believe everyone is nice, but we have to be more suspicious. Be on your guard."

Social engineering is a line of work that has developed for Jenny from being a consultant in influence techniques and body language. A bank asked her to test their security after hearing one of her talks. It led to further requests from private security firms, then to become a speaker on social engineering at a major London conference.

"In truth, I've been doing it since I was a kid in Liverpool," she said. "I learned to get into places I shouldn't just to see if I could. A lot of my family went on to become law enforcement officers."

// There's no point organisations investing in cyber security if we forget humans. We can be persuaded or bribed to give a password or click a link //

Boldly going into new AV territories

DEVELOPMENT of a 'leap in the dark' £50m science building at the University of Hertfordshire left two major impressions on Adam Harvey.

The building brings together all of the University's science facilities under one roof and creates a state-of-the-art teaching and learning space for students and staff including laboratories, cutting-edge research technology and informal areas.

Adam and his team set up an AV system that allows any video to be displayed to any of the building's 90 screens individually or at the same time. It was specially developed by Reflex, WyreStorm and POLAR Audio.

His first impression: "AV over IP is definitely here to stay," he told delegates. "It's very different to HDMI-based kind of world."

"I found that networks have a lot more diagnostic tools than traditional AV. When you put a signal into the system and it's not coming out, or it's coming out a different resolution or broken up, you can trace the IP and see exactly what's happening. It makes the diagnostic process simpler."

His second: "Working as a group with your networks team from day one is crucial - I can't say it enough."

"When we had problems, everyone sat around a table and sorted it out there and then."

The project team comprised consultants, technical representatives for the distributors and installers, managers from the manufacturer and both in-house and third party technicians.

"We had to think about many different things in delivering the project - what codecs to use, image quality needed, resolution, whether it could run on completely separate network or exist on normal university traffic," said Adam.

"We've got control data, dante audio data and multicasting running across our network as well as all the void traffic, wifi and normal desktop email traffic."



In his presentation 'AV over IP - Our Fantastic Voyage', Adam Harvey explained the background to the University of Hertfordshire's development of a landmark science building which has been widely nominated for AV industry awards. Adam is Solutions Architect - AV & Digital Media at the institution.

"It's all about making sure you structure your network properly - establishing good practice in what you do and how you deliver it."

Early issues with delivering a total system for an entire building included:

- the WyreStorm controller sitting across two VLANs - "multicast traffic flooding into areas they don't want fills networks people with horror, we had to tackle the problems head-on in discussions," said Adam.

- converging isolated systems prior to rolling out the multicasting - "we needed interaction between WyreStorm and Crestron networks, then the Dante. We had to converge it all and make it into different VLANs."

- general power to the building, site access and delays to completion. "It was a very patchy installation schedule and there were a lot of persistent power issues after the handover," said Adam.

But he described the resulting system as 'hugely flexible'. Not only could it route any input from any display into any room in the entire building but it also featured multiple monitoring control and diagnostic tools and, by running on normal Cat 6 cabling, it was easy to maintain. "Anywhere that needs an extra screen we just plug into a data point," he said.

"It was a bit of a leap into the dark for us, we hadn't done anything like it before, We have moved on from an AV world of an input, a switcher, outputs and a single cable. It doesn't work like that for us any more."

"The knowledge gap for some of our technical staff is hard to bridge," he admitted. "Some are struggling with the network concept of AV delivery. The key thing is to make sure you've always got the skills set."

// Working as a group with your networks team from day one is crucial. When we had problems, everyone sat around a table and sorted it out there and then //

'To change or not to change isn't the question. It's about how much we change'

DELIVERY of learning spaces and technology play a vital part in the recruitment drive for students, according to Alan Hill.

"We are all part of a recruitment campaign and what we do adds significant value," he told SCHOMS17. "This means we have to change all of the time. 'To change or not to change' isn't the question. It's about how much do we change, which direction is it going and how do we keep it going in responding to customers and users."

He disagreed that technology should not drive pedagogy. "Technology can help drive education, nudge it along by encouraging a different look at the way things could be tried and done."

But the pace we set must allow for quick changes of direction. "There's no point having so much momentum that you can't respond to a changing financial situation or a new technique wanted by students coming in to university."

He suggested that a good way to create sustained, balanced and well-paced change was to follow 'an explicit vision'.

"Getting it right is really important. Things like 'a learning space that is capable of adapting to class size and method within 30 minutes'. That's very clear.

"As for setting direction and creating momentum, it's important to have a vision statement agreed by everyone. The organisation has also got to be ready for it."

He described the work being carried out in Exeter IT to respond to change. "We're sorting out processes and structure and making sure finance is in place.

"When creating change with momentum, you've got to keep your team with you. It's potentially disruptive, you've got to deliver without causing chaos. People must feel they're part of the solution."

A former British Army officer, Alan described creating momentum as 'battle rhythm' - "understanding how

'Battle rhythm' sets pace for action



In his presentation 'To change or not to change', Alan Hill explained how the University of Exeter was creating the 'digital edge' to meet changing demands for research and education. Alan is Exeter's first Chief Information and Digital Officer.

long it takes to plan and deliver, setting it down and keeping it going. Everybody knows what they're doing on a given day."

"If you can set about the battle rhythm and do benefits realisation - 'I said and I did' - it becomes a virtuous circle. It's highly productive."

Alan outlined how Exeter IT was modernising its technology platforms - adopting video capture of lectures, installing an integration layer and introducing the iExeter app.

He called in "an agile development" with the platform run by ExLibris and the front end by Exeter IT.

"The app has changed frequently," he said. "Icons change according to student demand. We've included a 'My Progress' icon for grades and

assessment of employability. It's getting massive take-up.

"Users are reading about the library, where to find space to study, where there are PCs, when the cafe is open, when a washing machine is available in laundry, how busy the sport centre is."

The app attracted 45.5m clicks last academic year - there were 300,000 views of content on learning after introducing lecture capture.

He said the next step would be to build social media discussion around it. "We're constantly asking ourselves if what we do covers all bases or meets an educational need," he said.

"Can we get 'agile' into learning spaces? Can we ask 'do you like what you see, try it, change it'. Or do we have to have 'waterfall' - 'you told me exactly what you wanted five years ago, we've built it, it's out of date.'"

He summed up his top tips from Exeter as:

- Get your data right before creating momentum of change. "Find out all the data relevant to the area you're trying to solve. You're going to fall back on it every single argument you have with someone resistant."
- Speak non-tech. "Nobody understands a word we're saying when we talk about SDNs, LDCs, data centres, stacks, piles. Translate your idea into non-technical language."
- Understand the broader context. "If you come up with the idea for an expensive new 1,000-seat lecture theatre at a time when there might not be 1,000 students to fill a class, it's blown out of the water."
- Strategic alignment - "create change within the university strategy. Alignment wins friends, people say they will go for the change."
- Deliver it and shout about it. "Otherwise the effort gets lost and people take it for granted."
- Get ready for the next change - because it keeps happening. Create a momentum which is sustainable, drives value, works to customers and supports the university's strategic plans.

Learning spaces need team players



Dr Laura Hancock, teaching fellow in Chemistry at Keele University, explored her interest in technology-enhanced learning and student engagement in her talk 'Creating learning activities and spaces for digital age learners'.

MOTIVATIONS for introducing new learning methods and the need for flexible learning spaces were discussed by Dr Laura Hancock at SCHOMS17.

She reflected that, while current students were immersed in technology, this did not mean they were more amenable to new learning technologies.

"They're very adept at social media but is it also true when it comes to different technologies?" she asked.

"Digital age learners are at an advantage compared to their predecessors because so many more tools are available. Whether we're prepared to use them is a different matter.

"But the important thing is that we make use of appropriate technology that enhances learning not just use technology as a gimmick.

Information and knowledge are not the same thing. You require information to construct knowledge but just providing information isn't enough."

She said traditional lecturing remained the most straightforward way to provide information to a large group of people but it was clear alternatives were needed.

"Since 2012, I have taught first year organic chemistry. Students struggle with this topic across the sector. It's difficult because you get no marks by memorising anything. You have to have a good understanding of it and to apply it.

"They were clearly achieving low marks and it was demoralising. I wanted to do something about it. I had been teaching via lectures and a problem class, preparing screencasts and short videos for students to watch at home. It hadn't helped."

After periods of trying both lecture flipping and creating e-Learning resources, she came across Team

Based Learning (TBL) - "a special form of collaborative learning using a specific sequence of individual and group work and immediate feedback to create a motivational framework in which students increasingly hold each other accountable for coming to a class project and contributing to discussion."

Laura explained how the process started with pre-class preparation - homework or lectures, screencasts or e-Learning - as work outside the class. Then, in class, students sat a

test of multiple choice questions in test conditions.

The same questions were completed as a team with answers revealed by scratchcards. After any 'correctional instruction' from the teacher, the students moved on to use the concepts learned to solve challenging problems. "There's lots of debate and discussion," she said.

Laura replaced all lectures with four TBL workshops, using e-Learning as a homework activity to be completed in advance.

She had no concerns about taking 120 students in 20 groups of six on her own because they were interacting in groups and not having a worse experience.

It delivered a slight improvement in module marks. "More importantly, almost everyone enjoyed the workshops and said that fellow team members had helped them to understand the concept.

"Over half the students said it made them work harder - which supported the aim of active learning in class. Less than half said they should have been given more lectures."

However, there were drawbacks in terms of learning space.

"The main barrier is having to move tables," Laura said. "Twenty teams of six requires 20 tables. Currently all large cohort rooms at Keele are configured traditionally in lecture format. We ran TBL in the ballroom but it needed volunteers to move tables and chairs before class.

"Going forward, all new teaching and learning spaces need to be designed flexibly and chairs and tables should have wheels," she said.

"We have to adapt to digital age learners and facilitators. Academics may be deterred by the logistics. To make it easier for them we need to make sure learning and teaching spaces are designed appropriately."

// Academics may be deterred by the logistics. To make it easier for them we need to make sure learning and teaching spaces are designed appropriately //

InfoComm opportunities

InfoComm International staff instructor Chuck Espinoza spoke via video conferencing from the organisation's headquarters in Fairfax, Washington, on opportunities that membership provides.

FREE and discounted benefits in education, certification and market research were outlined to SCHOMS17 by InfoComm's Chuck Espinoza.

He explained how, as an institutional member, SCHOMS received InfoComm training opportunities from installation design and networking to technology and project management in the form of courses, virtual courses and webinars.

Chuck said the materials were also available as books, guides and CDs.

"We will even deliver classes to you if there is a large enough need," he added. "Just let your member service representatives know."

Free training included up to 80

videos on the YouTube channel from 'Quick Start to the AV Industry' for newcomers to 'AV Technologist Test' preparation for CTS exam.

Low-cost online courses were "a little bit more in-depth" covering issues such as design for your environment, infrastructure or system and CTS installation.

"We concentrate on things that benefit the industry - certifications, CTS, CTSi, CTSd," he said.

He previewed a new class in networked AV systems and invited enrolments to a CTS prep class due to be held in the first week of December. Anyone wanting further information was welcome to contact him by email at c.espinoza@infocomm.org

8-point scaling strategy

Mark McCallister, Associate Director of the Office of Academic Technology at University of Florida, put forward his ideas on 'Strategies for Scaling the Active Learning Affordances Campus-wide'

ENABLING factors suggested by Mark McCallister for the presentation of flipped and active pedagogies were:

1. Prime the pump - engage with the faculty and listen to students. Use focus groups, surveys, questionnaires. "We produce an annual Labs and Learning Spaces brochure."

2. Use a variety of rooms designs. One size does not fit all. Different people had different ideas.

3. Focus on flexibility - Mark gave the example of equipment that could be folded away if a room was wanted for another use.

4. Writing surfaces everywhere - "we have a room with no projectors or technology other than wifi and power outlets. But we've wrapped the rooms with a writing board."

5. Plan and manage capacities and capabilities. "Too many people and too much furniture in a room takes

away the capability to rearrange." He advised working with timetabling groups and enrolment management and to refer to images and metadata on FLEXspace. "I use an internal system to rate classrooms for suitability for active learning and flexibility and convertability between the two."

6. User interface standardisation - "teachers are going to deal with more flexibility in room layouts so we should give them less AV to ease their load."

7. Common attributes for timetabling - "when schedulers requested classrooms, their only choice was multimedia or not. We're working toward a set of attributes that allows requests for preferences like flexible seating and hifi audio."

8. Faculty development and outreach - revisit the work with academics and check what needs to be done next time.

Lab interpretation passes the test

Rob Hyde, AV Manager at the University of Bath, shared his recent experiences of 'Building Language Labs'.

TECHNICIANS and academics eventually began to talk the same language when it came to a refit at the University of Bath.

Appropriately, the matter at hand was a refurbishment of the language labs. Rob Hyde told delegates it took seven rounds of discussions - also involving the faculty IT manager - to agree specifications.

The project doubled the amount of delegate places in two laboratories - one containing six booths, the other seven. The labs were required to be linked.

"We were asked to provide simultaneous translation, consecutive translation, practice space, also to run a language conference and virtual classes held with both the European Parliament and United Nations to their stringent conditions," said Rob.

"And it's a standard classroom on top of everything else."

The new system was built by Reflex on Brahler kit, the standard for both the EU and UN.

After using it for three months, teaching staff asked for further capabilities. "Another three rounds of talks," said Rob, "but we got there in the end."

Since then a European Parliament test conference has been held in the labs. Students can work in pairs with one simultaneous translating. Webcams and microphones are both incorporated and students can play back from the serve.

"It was a huge combined effort between AV and IT to get it into shape," said Rob.

Centre gives students commanding view of world

Ian Case, audiovisual standards manager at Curtin University, Perth, Western Australia, took delegates on a tour of 'A Learning Space for Social Media'.

STUDENTS were given a command performance when the School of Marketing at Curtin University wanted an interactive centre for observing social media trends and analytics.

The result was a social media command centre powered by Salesforce Radian 6 software.

"We introduced a 3x3 matrix video wall offering nine different views into web portal such as where in the world people had been talking about a given topic, word clouds, most popular hashtags and comment feeds on Twitter, Facebook and other platforms," Ian said.

Individual work areas sat alongside break-out zones which featured flexible furniture such as specially-shaped tables, mobile chairs and writing surfaces.

Glass frontage to the building provided lots of natural

light and acted as a 'draw card' for outsiders to what was happening on the video wall.

"It's proved to be popular," Ian said. "It's also been used in industrial research and analytics involving students and industry visitors."

Ian also reported on developments at Curtin Medical School and with the university's AV standardisation project.

- As treasurer of the association for Audiovisual & Education Technology Management (AETM), SCHOMS' sister organisation in Australia, Ian gave an update on its activities. A new president, Scott Doyle, had taken office; the AETM website had been updated to include case studies, improved discussion forums and both credit card payment and registration procedures; new members had been attracted from secondary schools, museums and government agencies; and 'corporate delegate' status had been added to conferences. AETM had also launched a scholarship programme and membership awards.

Year of setting new standards

DRAMATIC changes to AV in just a year at the University of Wollongong were recounted to SCHOMS17 by the man charged with introducing them.

"We've managed three tenders and opened a new campus, two SVSI rooms and 31 new AV teaching spaces all with host name protocol, full IP control, RMS integration and new levels of design," Dave Rigter told delegates.

"We have remote monitoring of over 50 systems, highly adjustable presentation tables and facilities and management now actually cost AV into their projects.

"We also have close collaboration with the netcomms (IT) team. It's been an ongoing battle between AV engineers and netcomms engineer but it's getting better."

Dave told how it was achieved from a starting point of a 'scathing' independent report into AV at the university after its switch from Learning & Teaching jurisdiction to IT.

The report was based on provision in 100 rooms in the main campus - Wollongong has a total of nine campuses in New South Wales, six international campuses and a new South West Sydney campus under construction.

He gave some examples of the way it used to be:

- Typical lecterns of multiple black boxes, no network integration, no consistency of product. "It was not the fault of the team," Dave said. "They did the best they could with what they had."

Dave Rigter, AV Services Senior Tech at the University of Wollongong, described the journey he has taken in delivering scaleable and reliable AV systems to support teaching and learning activities at all of his university's campuses. He was speaking to conference as a result of gaining a scholarship from AETM, SCHOMS' sister organisation in Australia.

- Grey spaces, all analogue, nothing online, no networking devices. No coordination with architects or facilities management. No flexible furniture.

- Seven models of UIs from three different manufacturers, 20 models of projectors from five manufacturers, 26 models of OSP/Amp from 13 manufacturers and 43 models of switchers/scalers from 18 manufacturers. "I have no idea how you support that," Dave said. "And

this was in only 100 rooms."

Acting on 14 recommendations based on industry standards, Dave launched three simultaneous tenders for AV platform, supply of equipment and an integration panel.

He said AV solutions had previously been cheap and quick but didn't conform to new standards he drew up based on AETM guidelines. "Before we delivered AV solutions for Aus \$6k a room, now it's Aus \$60k a room after our strategic partnership. We have got to manage the cost jump, a lot of the labour cost is borne by my team."

He saw partnerships as the way ahead. "We partnered with technology consultants AVT and with our integrators. It's more efficient in the long-term.

"And I'm proud of what we've achieved with Wollongong's first collaborative space although it's not ideal, the lighting is poor and the tables are not on wheels."

Clear some space for creative thinking

Rosie Jones, Director of Library Services at The Open University, spoke on 'New Learning Environments: encouraging innovative space design'.

PROS and cons of user experience and the evolution of design were explored by Rosie Jones in her focus on innovative spaces.

She based her reflections around a state-of-the-art space she helped to create in October 2012 - The Alan Gilbert Learning Commons.

The Commons is a study and learning centre in the heart of the University of Manchester's Oxford Road campus offering exclusive group learning rooms, flexible breakout and work spaces with multimedia facilities, 400 fixed workstations with live update availability, MFDs for print, scan and photocopying, wifi access throughout including outdoor cafe areas and charging stations for laptops, tablets and smartphones.

Rosie said several creative concepts enabled the Commons to stand out from the crowd - all intended to celebrate the University's rich heritage of achievement and innovation.

These included Nobel Laureate chairs placed around the Commons to inspire students to aspire to the same greatness as the 25 Nobel Laureates associated with the University; laser-engraved quotes on oak panels from the great and good of Manchester; slate tiles recognising the history and honour of distinguished alumni; and displays of artwork, photos and poetry by students themselves.

"It was natural that their creativity should appear on the very walls of the building that inspires them," said Rosie. "Our students were instrumental in the planning of and consultation about the building from

day one - from grand concept through to technology choices, furniture design, interior colour, opening hours and even the type of coffee. Crucially, a student consultation group was used throughout every phase to understand modern learning behaviours, preferences and styles, and to hear ideas about the best use of space and the most appropriate application of ICT."

But while progress had been made with learning environments, Rosie questioned the pace of evolution. "In

each of these spaces you can see how they've learnt from the previous iterations and how they build upon it - and they've all completed fabulous spaces with something that makes them distinctive. But is there too much influence from

what's gone before?

"Is this how our design of spaces should be driven? That because our competitors have such a space we should build something similar? This best practice approach does stop some potential for blue skies thinking."

While the most successful spaces were driven by user experience, Rosie said it also presented problems - particularly around time and budget.

She highlighted suggestions at the recent SCONUL conference by architects FaulknerBrown that lessons should be learned from the activity-based workplace and public libraries and how creative learning could be supported by simple portfolios of furniture, small spaces and an appreciation of how people feel in an environment.



York scores hit with BRAT pack

Philip Stewart, AV manager at the University of York, revealed details of 'The BRAT - A Modern Solution to a Legacy Issue'.

HE'D rather it were called a 'digital board' or a 'VFlip' - in fact, he left it open for conference to suggest different names - but Philip Stewart outlined how his AV team's Board Replacement Alternative Table (BRAT) had made a difference to lecturers at the University of York.

The team built, connected, tested and commissioned the lectern for the 350+ seater lecture theatre in a new teaching building

"We have a lot of STEM subjects and the lecturers liked chalkboards. According to guidelines for the viewing distances, we needed screens that were six metres wide, but the biggest boards the manufacturers would make were five metres wide.

"We didn't want to do roll-down screens at that width because of the weight. We talked about interactive screens and visualisers but lecturers were critical of the writing areas."

So the AV team did some prototyping with a TeamMate interactive collaborative table, removing the projector, adding two visualisers and raising the camera to enable flipcharts to be viewed.

The feedback had been so positive that work was being carried out on a second model.

One lecturer said: "I find the ability to write legibly while facing the audience, and to have a permanent record of what was written very, very useful; another advantage is that the recordings capture my writing and drawing much more clearly."

As well as the lecture theatre, the new Spring Lane teaching building includes 23 standard seminar rooms, three experimental seminar rooms and study and informal meeting areas.

Make a date **SCHOMS18** University of York



Delegates line up for the traditional group photograph at the conference dinner in Crewe Hall.

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SCHOMS again played host to the UK's largest AV/IT suppliers exhibition with an HE focus. Companies set up stands in the exhibitions area in Keele Hall Ballroom, giving delegates the chance to discuss products, developments and requirements. Pictures by Adam Harvey.



Caroline takes over as Chair

SCHOMS has a new Chair of the Executive Committee - Caroline Pepper, Learning Environments Manager at Loughborough University.

Caroline takes over from Paul Wood, who served an extra year on top of the customary two-year term and now becomes Vice-Chair.

The executive also welcomes a new member - Jim Bain of Queen Margaret University, Edinburgh. He was voted onto the committee in a ballot of members which saw the re-election of Mark Dunlop, Jay Pema and Tessa Rogowski.

Mark Warren has stepped down as the co-opted conference host member to be replaced by Phillip Stewart of the University of York.



SCHOMS is the professional body for heads of services working within UK Higher Education. SCHOMS members lead and manage a diverse set of educational, media and institutional support services. They give strategic direction to support and promote excellence in teaching and learning practice.

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