



ISSUE

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DESIGNING THE FUTURE
OF EDUCATION

MOOCS

—
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the
change**

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UQ Biological Library - before the removal of their substantial book collection.

Massive Online Open Courses (MOOCS) are unlocking some of the best content in the world for students everywhere. In the past, schools and universities were defined by the quality of their collective knowledge, the reputation of their teachers and academics, and the quality of their libraries. The democratisation of content through online resources means universities no longer have a monopoly on content.

Many of the great universities and schools are now asking what impact does this have on our physical learning spaces?

In this issue, we explore the effect of MOOCS on your university and school, and look at how you can design your learning environment/ campus to take advantage of this significant change.

Content can now be delivered anywhere and anytime, which means students can familiarise themselves with the content before class. The real-time lesson on campus is then spent not on content delivery but on problem-based active learning to give students a deeper understanding of the issues.

The Flipped Classroom has significant impacts on the design of teaching spaces, as well as the type and range of library and social learning spaces on campus.

The focus on interaction, problem-solving and discussion in an environment specifically designed for active and social learning creates a strong community of learners. Even though this community can gather in a virtual environment if required, research shows it's the physical connection that has the most value for students. Therefore, the classroom needs to be designed to encourage direct connection between students and teachers.

JCU Education Central - Social learning spaces





JCU Education Central - Wet Learning Lab. 48 cohort learning space for science



JCU Education Central - Peer to peer learning space for school of education replicates the classroom.

JCU Education Central: Supporting active and social learning

The MOOCS model requires facilitation of group work and individual study by the lecturer or teacher. This requires a flexible classroom space that adapts easily to different class sizes and supports group interaction through appropriate technology and furniture that can be used in a variety of different ways.

In addition, social learning spaces need to replicate the classroom to enable students to extend learning in their own time.

Death of the Lecture Theatre?



English Prose I lecture in Physiology Lecture Theatre, n.d. UQA S177 P839 . UQ Image Archive

MOOCs have rendered the traditional lecture theatre obsolete. Already, we are seeing a dramatic reduction in attendance at university lectures where attendance rates of 30-50% are now common.

In a traditional lecture theatre, the seats are tightly-spaced and fixed to the front, the lecturer's voice is often amplified and the content is on a whiteboard. This is an efficient way to deliver content but does not easily adapt to other teaching and learning models. Students often can't be heard well throughout the room, and they are reluctant to crane their necks to interact with others in the class.



BGS Scholarship Expo. Image courtesy of BGS.

The question is: How can schools and universities provide a more engaging and collaborative experience in this type of space?

The answer is by using these spaces more strategically than before. For example, the Brisbane Grammar School's Forum is designed to support active learning and other teaching modes in a lecture-sized room. Double rows per tier with movable chairs allow participants to break into small groups as well as discuss and debate as a whole. The acoustics allow the participants to talk without amplification. The shallow rake of the tiers allows the teacher to visually engage with all the students. Even the lighting has been designed to set the mood of the space depending on the activity.

What is teaching in a flexible learning space really like? / How does a flexible learning space work in practice?



University of New South Wales Faculty of Medicine Technology Enabled Active Learning Lab (TEAL).

Dr. John Hunt Deputy, Head of School Faculty of Medicine, University of New South Wales, explains what it's like teaching in a Technology Enabled Active Learning lab.

'With the arrangement of all the tables around the centre console it worked a bit like having little satellites or hubs of students within constant arms-length at all times. Even when you were central in the room you were still never far from every student —no one could fall asleep.

The screens around the room worked very well and the overhead projector also turned out to be a handy tool as you could also project whatever paper document up onto all the screens. '

We managed to get claps and whistles at the end of the prac I think because they all felt engaged and involved with this new room set-up.'

When the pedagogy of an active, flexible learning space is mapped over the course of different lessons and lecturers, a dynamic range of learning modes can be seen over time. This ability to change modes rapidly requires the appropriate technology and furniture, particularly as class size increases. However, not every room needs technology to support flexible teaching practices. And even small classes can be flexible as long as they have more space than a standard room. Although, as the size of the class increases, technology can make it easier to manage the switch between learning modes, and make the lesson more compelling.



Schools and universities that have increased class sizes with active learning spaces.

- University of Queensland, Collaborative Learning Centre, 110 students, 2004
- Brisbane Grammar School, 30-120 students - 2009
- James Cook University - 81 TEAL & 42 seat Science Lab, 2013
- QUT Science Engineering Centre - A range of flexible learning spaces 48 -108 students (total 374 seats) - 2013
- UNSW - Faculty of Medicine - 72 person active learning space. - 2013
- Brisbane Boys College - New Middle School's 27 No. flexible learning spaces for 25-75 students - 2014

Are bigger class sizes better?

The assumption that a class size is limited to 25-30 students has more to do with being able to fit people in rows, having the whiteboard visible, and the teacher heard than it has to do with better learning outcomes. Technology has liberated us from this preconception.

Although active teaching models do require more space than traditional teaching, increasing class sizes to 60–90 students is achievable, and in some ways, desirable.

Our research into the 99 seat active learning space revealed that the student's perception of contact time with lecturers went up despite the fact that the student academic ratio did not change.

The room had three academics who facilitated the nine- person student groups. Also, the academics do not 'see' 99 people but a more manageable 11 groups of nine. Furthermore, from a timetabling perspective, the room was 50% more efficient in cycling students through the curriculum.

Q&A

Hamilton Wilson talks about how you can get the best active and social learning spaces for your campus.



What is the main education design challenge for schools and universities who want to remain relevant in the age of MOOCs?

MOOCs are here to stay and will continue to change the face of learning spaces. The challenge for learning Institutions is how they can reposition, repurpose or create spaces that best serve their learning communities.

What's the first step in getting the right solution for your school or university?

The early Technology Enabled Active Learning spaces were expensive and due to the lack of understanding of how to design these spaces they were often just copied from elsewhere. Unfortunately, just because it doesn't look like a traditional classroom does not mean it is the most effective solution for your campus. Every school and university needs a tailored plan that fits in with their objectives and the characteristics of their learning community.

How can schools and universities find out what their unique needs are?

A dialogue needs to begin with the academics and teachers about how space and technology can assist in delivering more flexible pedagogy, and what curriculum change needs to occur to make this happen.

For example, before the Queensland University of technology completed their new \$200m SEC building at the Gardens Point Campus, they invested in a prototype room which explored the challenges and opportunities that these spaces presented. (The new building caters to 374 students in large format 48-108 cohort flexible learning spaces.)

Each week we would meet with the academics for a debrief and feedback. For the first six weeks the discussions were firmly centre around the furniture and technology. At week seven the discussion began to shift and focus on pedagogy and curriculum, and how the technology and furniture enabled this change. This level of understanding can only happen by actually doing it!

PREVIOUS
ISSUES

NEXT ISSUE

Libraries

Wilson Architects has been at the forefront of education architecture for over 100 years. Our ground-breaking research for the Australian Learning and Teaching Council has given us unique insight into next generation learning spaces.

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