

TECHNOLOGY

World of ACTIVE LEARNING

Formal and informal learning spaces transform campuses around the globe

By Sherrie Negrea



At the University of Leeds in England, students taking classes in the Roger Stevens Lecture Theatre sit at small, trapezoid-shaped tables on tiered levels, working on group projects on a laptop connected to a video-sharing system.

At the University of Hong Kong, students meeting at the Chi Wah Learning Commons collaborate with classmates on joint course assignments at clover-leaf clusters of tables equipped with computers in a large airy room.

Active learning spaces are cropping up at campuses on nearly every continent as schools transform lecture halls, classrooms and informal study areas into collaborative

technology hubs. While many international campuses have just started to create active learning spaces, others have been developing them for more than a decade. As the trend in active learning classrooms has accelerated internationally, colleges in the U.S. can learn from the cutting-edge classroom design and technology that countries such as Australia and Hong Kong have built.

“There are good examples that are coming out from all over the world using different kinds of space design and different types of teaching,” says D. Christopher Brooks, director of research at Educause, who has conducted research on active learning spaces in the United States and China.

In 2016, John Augeri, co-founder and deputy director of Paris Ile-de-France Digital University, a government-led consortium, launched a three-year comparative study of active learning spaces around the world, covering eight countries and the European Union.

So far, he has found, international campuses are increasingly focused on creating active learning spaces in informal settings, such as libraries.

Yet at the same time, universities continue to experiment with and refine active learning classrooms because research shows they boost academic achievement.

“If the students are engaged and motivated and enjoying their learning, they’re more likely to have improved learning



COLLABORATIVE BY DESIGN—The University of Leeds in England redesigned three tiered lecture theaters to new standards that aim to improve collaborative experiences for staff and students. Each booth is embedded with digital technology to facilitate enhanced group work and accommodate flipped learning.

outcomes,” says Neil Morris, director of digital learning at the University of Leeds. “And the evidence suggests that these spaces improve their engagement, motivation and enjoyment.”

Developing models of innovation

After the concept of the active learning classroom was pioneered by Robert Beichner, a North Carolina State University physics professor, in the mid-1990s, Australia was one of the first countries to adopt the pedagogical design in higher education.

In 2006, the University of Queensland in Australia used Beichner’s model to develop its initial active learning spaces. Yet these early classrooms weren’t easily replicated: They each cost about \$1 million.

Five years later, the new Science and Engineering Centre at Queensland University of Technology offered a more scalable solution: six active learning classrooms, each priced at \$120,000, says Gordon Howell, the former director of learning environments and technology services.

What made the classrooms more affordable was an invention called COWS,

or Computers-on-Wheels, which is still in use and has now been adopted by universities in five other countries. Sitting on a trolley, the mobile computers are stationed at the heads of tables where groups of six students collaborate on projects.

“What it meant was that it could infinitely scale up,” says Howell, who is now



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manager of strategic customer experience, education for avt.tech, a technology distributor in Australia and New Zealand. “Before you had to have custom rooms and they would have to have a large amount of AV equipment in them. By moving to this portable model, all you need today is power and data.”

In the meantime, the University of Leeds developed what is considered the least common type of active learning classroom—the collaborative lecture theater. In 2016, officials reconfigured three new lecture halls by adding “pods” with small tables on tiered levels, where students work on group projects.

Students using laptops display work on a screen at the front of the room. They can also record presentations on a lecture capture system, from Sonic Foundry’s Mediasite.

“The ultimate goal is to try to encourage faculty to change their pedagogical approach and to stop giving didactic lectures,” Morris says, adding that college administrators from across Europe have visited the halls. “Most universities are finally realizing lectures create a passive experience, so they’re looking to engage their students with more active ways of learning.”

Getting informal in active learning

In Hong Kong, universities have undergone steady expansion since 2012, when the government decided to lengthen the undergraduate curriculum for all schools from three to four years. The University of Hong Kong responded to that change by building its Centennial Campus, which includes three new buildings and Chi Wah Learning Commons.

Of the 70 lecture halls and classrooms on campus, 15 were created as active learning spaces. But students also collaborate at the learning commons, a nearly 20,000-square-foot building located at



ENRICHING EXPERIENCES—McGill University’s Teaching and Learning Spaces Working Group designed these spaces on the Montreal campus to support whole-class, group and one-on-one interaction.

the center of the campus.

“Space in Hong Kong is very limited, and often families are living in very, very small accommodations,” said Toni Kelly, associate director learning environments at the university. “So students living at home don’t have access to quiet spaces to study.”

At the learning commons, students can work on group projects in a variety of spaces, including 25 study rooms or the clusters of tables in open areas. The facility also offers an advisory zone, where teachers and staff assist students using technology.

In his comparative study, Augeri found that learning commons have some common features: They provide spaces for both individual and group work, and they have zones that divide the centers into smaller areas offering services such as technological assistance.

“The learning commons is something that’s very fitting with the new lifestyle of the students,” Augeri says. “Instead of going back home or to the coffee shop, they stay in such a space where they have access to a wide range of services and facilities.”

At the University of Gothenburg in Sweden, the library’s learning commons is a popular gathering spot because the school does not offer dormitories and students

typically live in private apartments in the city. “When students want to meet and discuss their projects, they have no place to go,” says Maria Sunnerstam, an educational developer at the university.

Gothenburg students don’t have much contact with professors who teach large lecture classes. But librarians in the learning commons can help them with their projects. “For students, they are the primary contact at this university,” Sunnerstam says. “So librarians have a very important role.”

Considering low-tech classrooms

Many universities are creating low-tech environments to reduce costs and increase the supply of collaborative learning spaces.

“What is cutting-edge now is bringing what we know works in these active learning classrooms to everyone,” says Adam Finkelstein, academic associate and educational developer at McGill University in Montreal. “One of the problems with active learning classrooms is, ‘OK, we’ve got two but what about the other 300 classrooms on campus?’”

Making simple changes to a classroom can have a big impact on learning.

A study conducted in 2017 by researchers at Bethel University in St. Paul, Minnesota, found that high-tech and low-

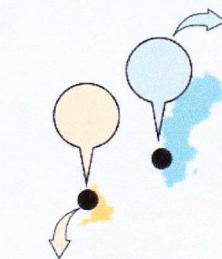
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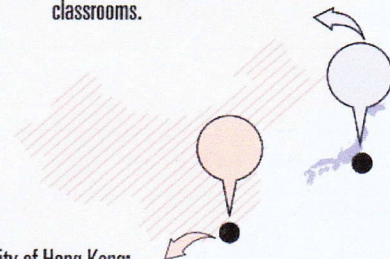
McGill University, Montreal, Canada:
One of the first outside U.S. to add collaborative learning spaces in 2008-09. It now has 16 such classrooms.



University of Gothenburg, Gothenburg, Sweden:
Built first active learning classroom in 2016 and now has eight. Also has a learning commons in its library.

University of Leeds, Leeds, England:
In 2016, converted three lecture theaters into collaborative learning spaces with tables on tiered levels, screen sharing and a video capture system.

Chiba University, Chiba, Japan:
In 2012, incorporated active learning classrooms in a library expansion. New College of Liberal Arts and Sciences building also has several active learning classrooms.



The University of Hong Kong:
Built a new campus in 2012 with 15 active learning classrooms in three buildings, all connected to a new learning commons.

Queensland University of Technology, Brisbane, Queensland, Australia:
This early adopter of active learning deploys COWs, or Computers-on-Wheels, that move among collaborative tables. The university has more than 60 problem-based learning rooms.



tech classrooms produced similar learning outcomes. An earlier Educause study on learning environments showed that placing round tables in a classroom changed the behavior of an instructor in a biology course. It encouraged the teacher to walk

around more and to lecture less.

“Some institutions that want to go in the direction of high-tech active learning classrooms can equip them with high-tech bells and whistles, but institutions that don’t have the resources can also do it,”

says Brooks, a co-author of the study that focused on the round tables.

Every week in a law course at University of Hong Kong’s Lok Yew Hall, 60 tables are set up for groups of four students to work on problems and present their findings to the class. The 240 students can’t share their computer screens on the room’s large display, so they give oral reports using a “Catch Box,” a soft foam cube containing a microphone that they toss to another group after they make their presentation.

“It’s not high-tech in terms of lots of display screens everywhere, but it’s using technology appropriately,” says Kelly, who also led learning space development at the University of Birmingham in England. “We try not to outfit the room with lots of technology. It’s not about the technology. It’s about how we can help the teachers do what they need to do.” **UB**



INSTRUCTOR TRAINING—Active learning classrooms at Gothenberg University in Sweden have tables for group collaboration. The professor is typically stationed in the middle and will move between groups. In this room, each group has its own whiteboard.

Sherrie Negrea is an Ithaca, New York-based writer and a frequent contributor to UB.