HOW TECHNOLOGY IS TAKING HIGHER ED LEARNING SPACES TO NEW HEIGHTS

5TH
NEXT GENERATION
LEARNING SPACES

The time for higher education learning spaces to invest in technology is now. Tech-savvy students are entering colleges and universities with more self-taught knowledge than ever before. Having grown up in the digital age, millennials and Gen Z'ers are not only looking for schools that meet their technological capabilities - they're demanding it. In the physical classroom as well as online, colleges and universities are using artificial intelligence and machine learning, innovative instructional techniques, and more inclusive educational experiences to broaden their offerings and better prepare students for the workforce upon graduation. Below are just a few ways technology is transforming learning spaces.

REALIZING VIRTUAL REALITY'S POTENTIAL

Perhaps the most significant technological transformation for on-campus learning has come through VR. According to a recent **ABI Research report**, VR device use is expected to increase **85%** by 2020, with the majority of growth occurring in gaming and education. **An Internet 2** survey found that **46%** of colleges already employ some sort of virtual reality. According to that same study, **55%** of institutions have dedicated VR spaces on campus, **51%** have adhoc VR spaces, **38%** allow users to rent VR equipment, and **26%** use mobile carts to move VR equipment between locations.

While VR offers new opportunities for students, schools must take into consideration practicality. For starters, classroom architects and designers must ensure that there is adequate and appropriate physical space to meet VR's unique requirements. IT administrators need to be sure that the PCs to which wearables are tethered have enough computing power, and that the entire school has the wireless network capacity to support VR applications, regardless of the location. As more schools begin to incorporate VR into their curriculum, designing for the technology will become less of an afterthought and more of a primary focus.

Beyond physical devices, modern learning spaces also incorporate virtual content creation platforms. Labster, for example, is a virtual chemistry lab offering students never-before seen opportunities such as the ability to test out Nuclear Magnetic Resonance with zero real-life repercussions. Learning Space innovator Tonya Peck, previously a Principle at Microsoft, agrees that classroom spaces are "evolving to become more flexible, allow increase digital sharing ("my screen, then your screen…") [aka 360-degree cameras]. Faculty that can create equally effective learning environments online and in 'meet-space', especially simultaneously, will excel," she says.

MIXING IT UP WITH BLENDED LEARNING

A combination of digital and face-to-face learning, blended courses offer the flexibility of online learning paired with the direct communication of live classes. In a survey from **Inside Higher Ed, 38%** of instructors said they taught a blended learning course, up slightly from **36%** in 2017. In addition to the cost savings that blended learning offers, this strategy provides students with more control over how they access information and can be just as effective (sometimes more) as 100% face-to-face or 100% virtual learning. Blended courses also give instructors more of an opportunity to craft course as they see fit. The Inside Higher Ed Study found that **25%** of educators said they worked hand-in-hand with a designer to construct their own format for a blended course.

Acting Director for the School of Business at Marylhurst University, Paul Ventura, is an advocate for this approach. He says that the blended learning structure often encourages quieter students to engage in more lively, dynamic discussions than they might in the classroom. He also mentioned the additional capabilities afforded by blended learning, saying that students and teachers alike could introduce elements that aid in later classroom discussions. "Our students are bringing in resources; they're bringing in links to videos—things that you can't do in a spontaneous classroom."
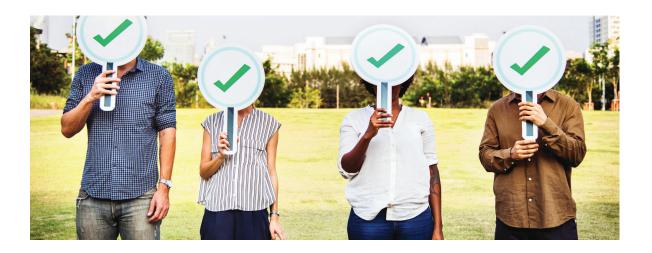
For blended learning beginners, Tonya Peck advises that they "start with the learning objectives; for the students AND the teachers (in other words, don't start from the "latest technology" and force learning into/onto it). Then, engage learners and teachers in the spirit of experimenting "how these technologies might aid our work together?" This emphasizes the duality of the relationship: teachers can learn and learners can teach."

San Jose State University's (SJSU) Electrical Engineering program is the perfect success story of how using blended learning can directly lead to students' success. The program enrolls over 600 students per year and, when offered as a traditional lecture course, typically passed only **59%** of students. In an effort to improve student performance, SJSU introduced the course in a blended learning format. They included an online portion that offered interactive learning strategies with immediate feedback tools for students to self-correct their work. They allowed students to complete coursework on their own time and scheduled on-campus, peer-to-peer activities for even more collaboration. So what was the result? The pass rate jumped to **91%** the following semester.

DESIGNING FOR THE 'NEW NORMAL'

Designing courses and spaces with inclusion in mind has been a growing trend in recent years, especially as the definition of a 'normal' student continues to dissipate. Gone are the days when all students were 18 and fresh out of high school. Today's students may already be in the workforce, or may have their own families to consider. According to a **National Center for Education Statistics** report there was a **35%** increase in college students aged 25 to 34 between 2001 and 2015. This number is expected to grow another **11%** by 2026. Older students tend to have irregular schedules and need flexibility that rigid learning structures of the past could not offer. By incorporating more mobile learning opportunities through online portals, podcasts, and audio/video counterparts, students can learn just as well in remote locations as they can in the classroom. Mobile learning expands students' access to education and allows them to learn at their own pace, whatever their lifestyle.

Other 'new normal' students to consider are those with different abilities. Previously, higher education students with physical or mental disabilities often had to ask for additional services to ensure equal participation opportunities. While they usually received some sort of assistance, a truly equal scenario would be one in which the schools readily offered them. Now schools with Assistive Technologies (AT) take this out of the equation. ATs span from basic Optical Character Recognition (OCR), used by students at the University of Tennessee Knoxville, to campus navigation tools such as **Aira**. **Campus Technology** recently reported on vision-impaired Jimmy Cong, a student at The University of California, San Diego, who has been testing out Aira to both get around campus and complete his coursework. The technology integrates through an app on Jimmy's pone and allows him to get his work done faster and find his way around campus much easier. "It is basically like having a friend with you just a tap away," said Jimmy.

Also making waves is The National Technical Institute for the Deaf, a college of Rochester Institute of Technology. NTID partnered with Microsoft to develop **C-Print**, an AI speech-to-text (captioning) tool intended to help NTID's deaf and hard of hearing student population. The program was so successful that between 2007 and 2016, captioning hours increased by **58%**. NTID later expanded to **Microsoft's Translator for Education,** which specifically aids international hard of hearing students.

The Microsoft Translator supports 60 different text languages and is particularly useful for courses that regularly use technical jargon, where basic speech-to-text translation would be otherwise more difficult. Both C-Print and Translator for Education use real-time captions on screens behind live instructors, allowing students to shift between the interpreter, captions on screens, and transcripts on mobile devices. RIT is one of only nine colleges currently using these speech- to-text technologies in the live classroom setting.

The more advanced technologies become second-nature for incoming students, the more schools will need to rethink their old strategies. According to a **May 2018 NPR Podcast**, enrollment in higher education institutions is down for the sixth straight year. Schools that don't change with the times will continue to risk lower enrollment or even obsolescence. Navigating spatial requirements, incorporating new instructional techniques, and designing for inclusion are all crucial to maintaining relevancy, but real transformation for both students and institutions will only come if schools are ready to do a total overhaul. Technology must shift from being an afterthought to a priority.

SOURCES

https://campustechnology.com/articles/2016/03/07/education-gaming-drive-virtual-reality-gear.aspx

https://campustechnology.com/articles/2017/05/16/5-vr-trends-to-watch-in-education.aspx

https://campustechnology.com/articles/2018/04/05/microsoft-ai-gives-deaf-rit-students-auto-captioning-boost-in-lecture-presentations.aspx

https://campustechnology.com/articles/2018/09/25/ucsd-first-campus-to-offer-agent-assisted-service-to-low-vision-students.aspx

https://collegepuzzle.stanford.edu/impact-of-technology-on-higher-education/

https://edtechmagazine.com/higher/article/2013/10/high-tech-learning-spaces-are-changing-education

https://edtechmagazine.com/higher/article/2018/06/ubtech-2018-higher-ed-sees-great-potential-virtual-reality

https://www.educationdive.com/news/report-46-of-colleges-employ-virtual-reality-in-courses/525349/

https://er.educause.edu/blogs/sponsored/2018/5/virtual-reality-in-higher-education

https://hechingerreport.org/is-college-enrollment-among-older-adults-increasing-depends-who-you-ask/

https://www.insidehighered.com/news/survey/survey-faculty-views-technology-explores-online-teaching-oer-assessment

https://online.purdue.edu/ldt/learning-design-technology/resources/how-has-technology-changed-education

https://tech.ed.gov/files/2017/01/Higher-Ed-NETP.pdf

http://web.utk.edu/~jenscag/SPED590/SPEDpresentation.pdf

5TH NEXT GENERATION LEARNING SPACES

JOIN US!

February 25th – 27th, 2019 | Los Angeles, CA

AGENDA

REGISTER

SPONSOR

Email Enquiryiqpc@iqpc.com for more information