



Reimagining Higher Education: The Post-Covid Classroom

Rob Curtin Tuesday, April 6, 2021 **Teaching and Learning**

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As we prepare to return to campus, many of the technologies that helped us simply survive and sustain classroom continuity will become permanently embedded in our educational methods and play a pivotal role in the refinement of practices consistent with an ongoing shift to more student-centered learning.



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The response of higher education institutions at the outset of the pandemic to rapidly adopt technology to maintain academic and operational continuity could be described as heroic, and it most certainly displayed a level of organizational agility that burst traditional stereotypes regarding educational organizations' ability to change. Yet this shift to what is now generally recognized as "remote learning," while very impressive, has proven to be no replacement for the campus experience that so many students covet. Many learners had challenges with accessibility, inclusion, and engagement. We were reminded that the digital equity gap unfortunately persists—and has continued to widen—during the pandemic. We experienced increased fatigue from staring at "squares-on-a-screen" and feared, or maybe even chuckled at, our virtual classes being "bombed" by outsiders.

These challenges are not unlike those associated with an emergency response in the physical world. Our rapid response was akin to delivering a "digital tent city" for learning. Just like residents in physical tent cities, our campus communities had to deal with concerns for physical safety, stress from the unknown, and the discomfort of change. We all want to return "home" to the security and safety of campus, where we can embrace the lifestyle, workstyle, and learning models we cherish. Campuses will certainly reopen, and reopen safely, but we must ask: "How has this

experience changed expectations? What will emerge as the new normal across campus and in the classroom?"

We have proven we can be agile and include remote participants in lectures. Will students or faculty now expect an option to join any class remotely? Are there elements of remote learning that will persist in the classroom? The answer to both of those questions is an emphatic stream of +1's and thumbs-up emojis in the IM window. Students have made it clear they want the option to return to campus. They also want—and will expect—the option to join any class remotely or watch it later and contribute their thoughts to an asynchronous conversation. Flexibility positively impacts the student experience, and capabilities that make the traditional classroom more engaging, more accessible, and more inclusive are accretive to the learning process. As we prepare to return to campus, many of the technologies that helped us simply survive and sustain classroom continuity will become permanently embedded in our educational methods and play a pivotal role in the refinement of practices consistent with an ongoing shift to more student-centered learning.


The Next Stage in the Evolution of Education

While the response of higher education institutions to the pandemic should be applauded, the work is just beginning. The rapid shift to remote learning was a powerful start, but over the past year we've learned that solely hosting lectures as online meetings is leaving some students behind and leaving many yearning for the rich campus experiences that fostered learning in and out of the classroom. The Economist Intelligence Unit (EIU) found that 60 percent of faculty witnessed a drop in engagement as students struggled to stay focused and that 70 percent of faculty are concerned about their ability to deliver engaging, high-value learning experiences.¹ John Hattie, a professor and director of the Melbourne Education Research Institute, noted: "One of the biggest factors that influences student engagement and performance is their sense of belonging in their higher education experience. This is what has suffered the most as a result of COVID-19." Without a strong sense of community, students are struggling to keep up academically.

Remote learning was a critical and necessary next step, and only 7 percent of students believe remote learning will not be beneficial to their education. As learning practices continue to evolve, new remote learning and collaboration technologies, in concert with pedagogy, will be critical to enabling inclusive, personalized, and engaging hybrid learning experiences to bring students together beyond simple videoconferencing and recording of lectures. The EIU report paraphrased Michael Horn, co-founder and distinguished fellow at the Clayton Christensen Institute for Disruptive Innovation: "The key to making active learning work online is to leverage groups and technology to make students accountable and give them 'skin in the game' to do the work." Before the pandemic, some colleges and universities were already on a path to leveraging technology to create more student-centered experiences, and these institutions fared exceptionally well despite the disruption.²

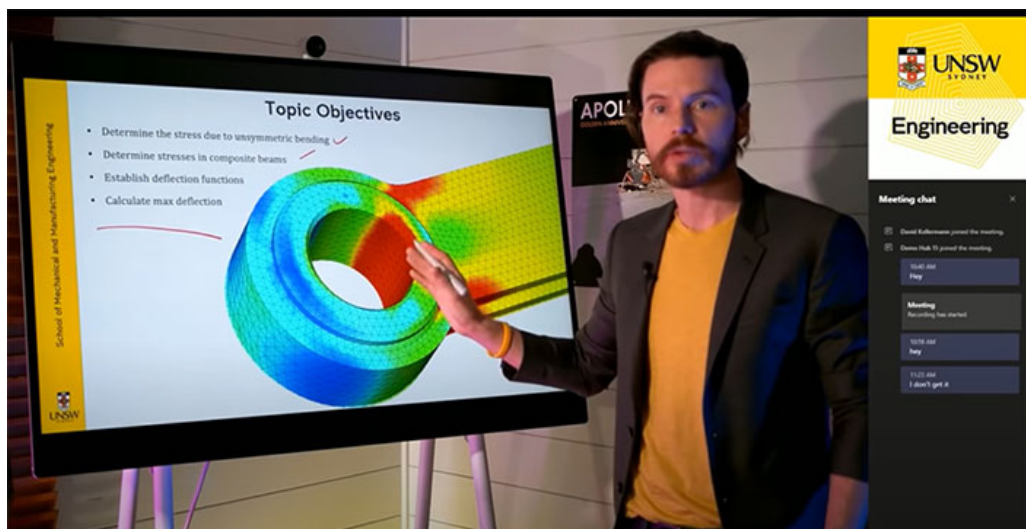
Class Uninterrupted—and Transformed

Two universities—Florida State University (FSU) in the United States and the University of New South Wales (UNSW) in Australia—envisioned two different student-centered learning experiences that show how technology can be accretive to the future of education.

FSU's "**Campus Reimagined**"  initiative was already laser-focused on modernizing the learning experience, and the pandemic presented an opportunity to rethink flexible and inclusive teaching. One entrepreneurship class—led by Professor Bill Lindner, director of the Campus Reimagined initiative—recorded more than 100 short, on-demand lecture sessions. In class, students used a custom app on their mobile device to decide on class content for the day, enabling students to direct their own course of study. During lectures, students were encouraged to use their device to provide real-time polling feedback. Each week, students received personalized recommendations based on their interests and goals for the course and were prompted to engage by writing comments and recording a brief video observation. The digital feedback loop enabled by a collaborative learning platform and customized class apps—in this case Microsoft Teams and Microsoft Power Apps—led to a virtuous cycle of enhanced student engagement, critical feedback on how to improve the class, and ultimately an effective, innovative, and fun learning experience. And when the

pandemic hit, the class was able to adapt immediately without interrupting studies. "When the disruption [from the pandemic] happened, you didn't know how the students were going to feel about suddenly class being 100% the Teams environment plus the custom apps we developed that are surfaced through Teams" said Sean Brown, chief strategist for Campus Reimagined. "But they loved it. We did focus groups after and students said, 'This is still my favorite class.' The thing that I noticed, is that for the students they just saw it as class—they didn't see a big line of demarcation [from pre-pandemic to post-pandemic]. That was my proudest victory for the concept that digital support for students can be vastly increased over what it is today."³

Across the globe at UNSW, Professor David Kellermann manages classes of over 500 students as learning communities, with individual students able to engage and get the help they need to succeed. Kellermann started with Microsoft Teams, setting up a team for the class and assigning different lectures and class dates to different channels. Each channel would have a series of tabs that would, in effect, constitute the class. There would be no textbook. Instead, real-time digital inking and problem solving with in-class chat streams and collaboration from the learning community would serve as the course material. Thanks to digital inking, complex engineering problems could be solved, step by step, right before the eyes of all students, no matter their location. Classroom lectures would appear in Outlook as calendar events, as would key assignments. And all these capabilities would be available to students on their laptops and their phones, both on and off campus. When students are tasked with solving a problem, Kellermann links to a digital ink-enabled OneNote class notebook that has the same sort of notes and problems as on the lecture slide.



Professor David Kellermann, at the University of New South Wales (UNSW), demonstrates how he uses personalized and interactive software to present engaging, remote lectures during the COVID-19 pandemic. *Reprinted with permission from Microsoft.*

Providing personalized help to more than 500 students with a limited number of teaching assistants (TAs) presented Kellermann with another challenge. His answer was **Question Bot (QBot)**,¹⁵ an Azure-powered bot that scanned the chat stream for conversations and questions about key engineering concepts or problem solutions. The bot would identify the student and then notify that student's assigned teaching assistants or tutors as a to-do task—complete with push notifications—to respond to that student, who would then respond directly into the chat. Kellermann added Microsoft Cognitive Services and QnA Maker to train the AI to recognize the relationship between answers and concepts over time. As the course is taught, and more answers are provided by the tutors, a knowledge base connecting common questions and provided answers is automatically generated, making the Question Bot smarter and capable of supplying answers on its own. This can help save time for tutors and TAs to focus on students who many need more individualized support while also providing an additional, self-service catalog of information that students can engage with at all times of the day. While Kellermann built a bot from scratch, the latest technology tools empower any faculty member or TA to develop a bot, custom app, or workflow that helps students in a low- or no-code environment. Educators have used tools like Power Apps, Power Virtual Agents, and Power Automate directly in Microsoft Teams to engage

students and personalize learning in creative, customized ways for their classes without the engineering expertise of Kellermann.

During the pandemic, while USNW was undergoing remote and hybrid learning, Kellerman created his own lecture studio that enabled him to enhance basic lecture streaming and enable real-time, collaborative, and interactive remote classes. To better engage students during lectures, Kellerman uses his Surface Hub device and its built-in digital inking capabilities. This empowers him to show real-time, live problem solving of equations to students, rather than just providing answers to tough questions. In these lectures, the class chat window is pinned to the side of the Surface Hub screen, so everyone in class can see what their peers are asking live. The studio also contains different cameras and monitors, so that no matter what he's doing, Kellerman can always maintain eye contact with his students and better gauge their involvement while providing a friendly face to everyone, no matter where they are in the world.

USNW students were also unable to access campus labs during the pandemic. For many, this meant that their lab courses would involve them watching a recording of their professor undergoing an experiment, which can be uninteresting and hard to follow. To create a more resonating experience, Kellerman used Azure Connect to create an augmented reality (AR) lab for his classes. This AR lab consisted of digitized, interactive rigs that students could use to conduct their experiment directly through Microsoft Teams. They could also pull up SharePoint-hosted documents and videos directly in the lab, instead of having to switch back and forth between windows.


At UNSW, Kellerman's classes saw incredible results, just like at FSU. When his students were asked if they felt like they were part of a learning community, 100 percent of them said yes. Exam pass rates increased from 65 percent to 85 percent, and Kellermann found a whopping eight times increase in discussion posts and a twenty times increase in engagement during lectures. "To think that we have that number of people from that diverse a range, from different walks of life with different needs and requirements," remarked Kellermann, "and all of them feel that they're working together collaboratively." These technologies, "leverage the benefit of each person's learning experience to benefit everyone's overall education. I'm now able to reach over 99% course satisfaction. The experience is multi-

modal, it's accessible and it's tailored to the specific needs of every individual student."⁴

The Next Chapter

While every higher education institution made a tremendous effort to adapt to the pandemic, those educators who had already embraced the shift toward more personalized, student-centered learning experiences were able to quickly adapt and to maintain student engagement. Just as the music video, originally conceived as a recording of the concert, went on to stimulate a wave of creativity from artists, remote learning is producing a wave of creativity from educators. They are rethinking their practice and reimagining learning experiences—stitching together inclusive elements of remote learning with the social benefits of being on campus and adding the immersive value of being in class. Technology undoubtedly plays a supporting role in these reimagined experiences, and the social and emotional value of "being there" will keep campuses and classrooms thriving while "being included," even when physical attendance isn't possible, empowers students to drive their learning and remain connected to their community of peers, mentors, and professors.

This is a tremendous time for opportunity and innovation. Some may call it "hybrid," and others may call it "hyflex." Regardless of what we call it, these changes are sparking an endless amount of faculty creativity around learner-centered experiences. Colleges and universities face similar challenges around the world, and there are few, if any, industries as collaborative as higher education. By working together and collaborating with partners who share the vision for more student-centric models, we can make learning more accessible for all students.

Microsoft has created a private Higher Education Community, where educators and leaders from higher education institutions can connect. You [can join here](#)  and start learning from others, contributing to conversations, and sharing your ideas with a worldwide audience.

Notes

1. Emily Wasik, *Bridging the Digital Divide to Engage Students in Higher Education*,[↗] Economist Intelligence Unit (EIU) report, December 15, 2020, pp. 9, 10. ↩
 2. Ibid., pp. 13, 14. ↩
 3. "Florida State University Reimagines Student Learning with Microsoft Teams,"[↗] Microsoft (website), March 22, 2021. ↩
 4. "STEM Learning at Scale: Using Microsoft Teams and AI for a More Humanistic Education,"[↗] Microsoft (website), October 8, 2019. ↩
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Rob Curtin is Director of Higher Education at Microsoft.

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