Innovation in Video Production with UC San Diego's Studio U

Taking Self-Service Video to the Next Level

Larry L. Sautter Award Proposal 2020

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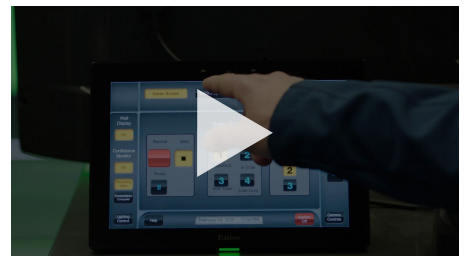UC San Diego Information Technology Services

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UC San Diego's Studio U is a self-service multimedia facility that enables the campus community to easily create studio-quality instructional videos efficiently and on their own schedule. Faculty can quickly make a variety of video styles to meet their pedagogy needs, including green screen, screen recording with voiceover, interview style, and Learning Glass, without needing to learn any of the underlying audio-visual technology thanks to simple push-button controls and room automation that goes far beyond any previously available simple studio solutions. To see the room in action,
watch this brief walk-through video. http://www.kaltura.com/tiny/8bihf

The Challenge: Scaling high-quality and effective course video
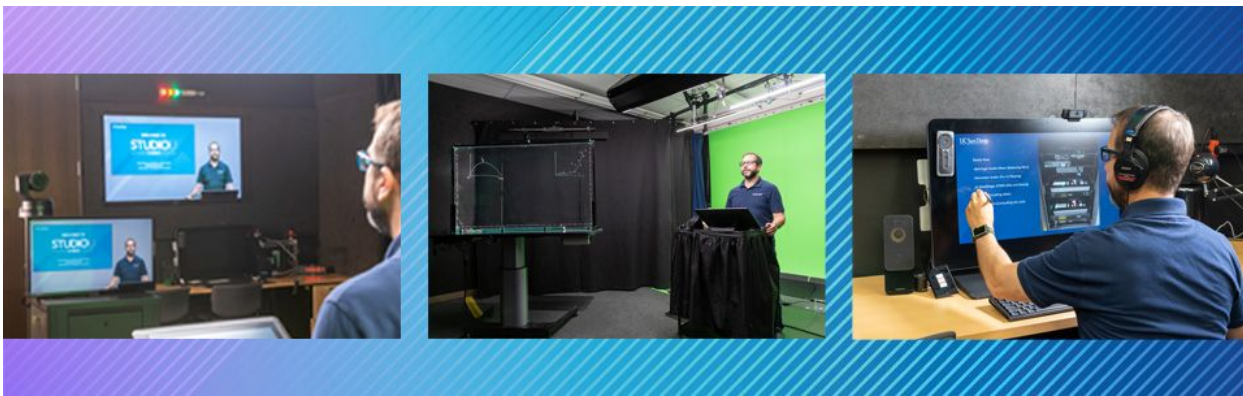
UC San Diego's Multimedia Services is regarded as a higher ed leader in creation of engaging and professional multimedia content to support course instruction. The team is staffed by industry professionals with experience in the entire breadth of instructional video production, from initial scripting and pre-production, to filming and editing, to optimization and distribution via a streaming service or LMS.
A valued and sought-after service by faculty, Multimedia Services is usually at full capacity with online/hybrid

courses and grant-funded projects. The team receives multiple requests each quarter for free video production services, and, while able to fulfill some of these requests, many of these low/no-budget projects have to be turned away despite the quality of the ideas or usefulness of the content.

At the other end of the content creation spectrum, instructors create learning content themselves from home or the office, using a variety of consumer-grade equipment and software. This scales well, but results vary widely with this approach. Quite often the outcome is a recorded lecture with distractingly low-quality video and audio, not to mention the under-utilized equipment that is only available to a single instructor or department.

What was missing was a third option that combines the best of both worlds: professional video capture equipment in a true studio space *plus* the ability to deliver engaging video content efficiently, affordably, and at scale — all available at the faculty member's convenience. **Enter Studio U.**

The Studio U Solution: Bringing high-quality video to an entire university

Studio U is a free-to-use resource for UC San Diego faculty and staff to support the creation of video content for instruction and academic programs. After a 30-minute hands-on training session and using just the simple control panels in the room, instructors are able to record green screen, learning glass, screen annotation, and a variety of other videos without needing to understand the complexities of lighting, microphones or cameras. Within moments of stopping the recording, faculty are able to walk away with a professional quality video file on a standard USB thumb drive that is ready to post to a course website or online video platform.

Studio U is fully automated, and designed to address a broad range of video recording needs on campus:

From left to right: slideshow/annotation with voiceover, interview videos with a curtain backdrop, Learning Glass for chalkboard-style lectures
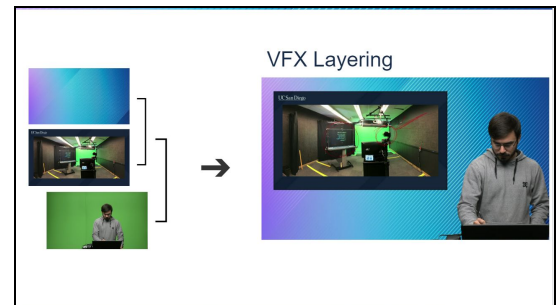
Green Screen videos with several layout options

For examples of actual videos created in Studio U, please watch this brief demo here:
http://www.kaltura.com/tiny/53hsb

Unlike typical green screen productions that require several layers of effects to be done in post production, Studio U takes a unique approach and handles these complicated processes live and automatically through a combination of specialized hardware in the room. The multi-tiered video effects system allows for a wide variety of layouts and effects that only require a push of a button during the recording session. Instructors have the ability to choose different backgrounds, different slide locations and presenter positions all from a simplified touch interface that runs the room's control system.

This multi-tiered system is built by combining elements from classroom AV control systems, a pan-tilt-zoom camera, ATEM video switchers and macros, professional video lights and microphones and relay power switches in an innovative way that allows for automation of the studio's features. This technology allows the presenter to focus on presenting their content instead of dealing with the complexity required of a high-end video production.

Demand and impact

Right from the outset, Studio U became a highly sought-after resource for enabling remote, hybrid, and online courses. Since its inception in June 2019, Studio U has been used by 73 instructors in 232 sessions for 477 hours of studio time. By February 2020, demand for the room was rapidly reaching 100% even as new time slots were created. With the transition to remote delivery during the Winter quarter 2020, the room was in use 100% of the available time slots for the 3 weeks leading up to the campus closure in mid-March.

We created a promotional website, https://studiou.ucsd.edu. This website has an embedded booking tool that allows instructors to see the availability of the room and book their sessions with just a few clicks. The website also serves as an outreach tool to help faculty learn about the space and how they can benefit from its use.

One of our partners in this process of generating demand is the UC San Diego Teaching + Learning Commons. Working with the Digital Learning and Engaged Teaching hubs, we have seen Studio U serve a vital role in course redesigns and efforts to expand multimedia usage by faculty who had previously avoided it due to concerns over costs or technical capability. The Teaching + Learning Commons along with the faculty
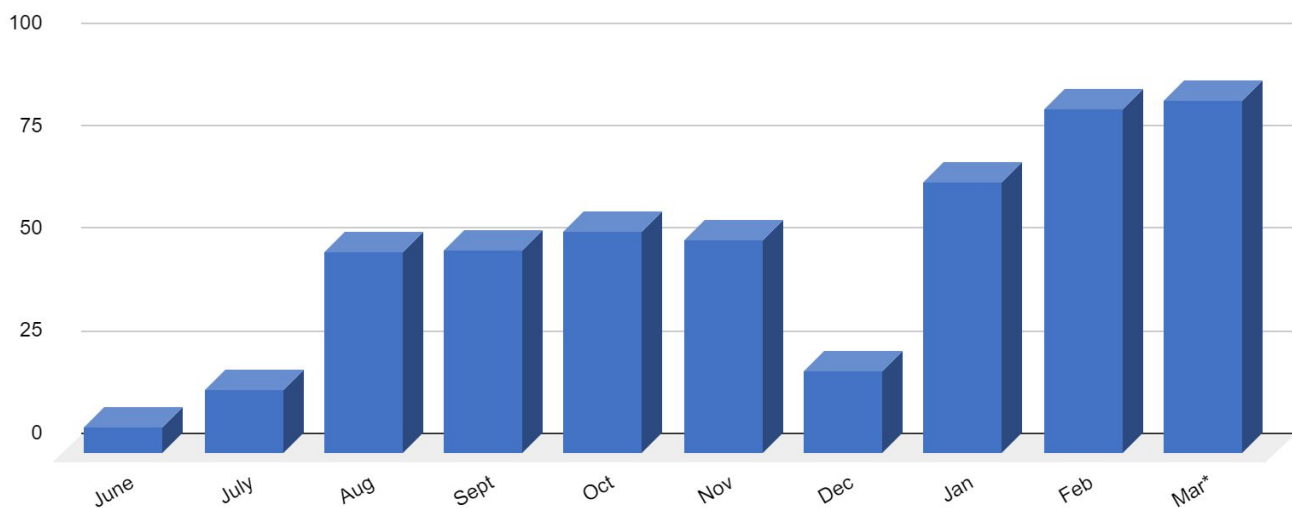
using the room have been key members of our design team helping to call out the features that are needed and voicing pain points that need to be addressed.

A good example of this feedback came early on in the deployment of the room, several instructors mentioned that the touch panel was a great way to set up the room but they would also like a way to control the room from each location. Through discussion with the faculty, we came up with a physical button layout that would give them the basic functions they needed at each location and prompted the use of the pause functionality of the recorder to allow real-time editing and using multiple stations in the room in the same recording.

Measurement of success

As instructors have learned about the studio, the usage of the room has continually increased. This increase in usage not only speaks to the perceived value of the service but its uptime and reliability, which is non-trivial for a home-grown hardware and software solution.

Usage in Hours (June 2019 - March 2020)

*Due to the COVID-19 closure in March, these hours are for the time period of 3/1-3/18)

Qualitative feedback for Studio U has been very positive, and instructors enjoy the convenience of producing quality videos themselves.

> *"Studio U is an awesome resource for ASL instructors. We hope to book more sessions soon. Thank you so much for the accessible tour and instructions!"* - Peggy Swartzel Lott, Ph.D., Continuing Lecturer, Department of Linguistics, UC San Diego

Studio U continues to transform self-service video

Now that Studio U has been in place for almost one year, we're already actively testing enhancements to make the service even more useful and efficient for the campus community. A few additions in the works:
- Zoom/live streaming integration for remote content delivery
- Kaltura integration for uploading videos directly to an instructor's course in the LMS
- Card swipe/RFID integration with campus ID for room access and automation

Sharing our innovation throughout the UCs and beyond

The entire UCSD Multimedia Services team firmly believes in sharing local innovations broadly and helping higher ed colleagues replicate our successes at their own campuses. Our philosophy is to share everything about projects like Studio U, including parts lists, construction diagrams, user documentation, and lessons learned.

We've had the opportunity to present Studio U at UC system and national conferences, including as part of the DET/CHE 2019 tour of the UC San Diego campus with over 100 visitors, and as a result have garnered interest from dozens of institutions looking to offer their own version. UC Irvine and several other schools, along with the ones mentioned below, have sent technicians to take a more in-depth tour of the room to learn how they could replicate it at their campus. Our team has shared the design and AV drawing allowing other schools to base their studios on our design. Since this design is completely new and not a turn-key solution, we continue to work with the schools that are interested in replicating the space. A few of the institutions now actively building their own "Studio U" include:

- California Lutheran University
- Santa Clara University
- CSU San Bernardino
- Woodland Community College

Extron, the vendor for the control system used in the room, has also toured the space and used our design as a reference to other clients as an ingenious application of their tools. In a generous display of industry and higher ed collaboration, they have also worked with us since the rollout to develop software drivers that could replace certain hardware components and make future builds simpler and more cost-effective.

Acknowledgements

The team would like to thank our Instructional Technology Governance committee for their endorsement of the self-service video concept, and to our faculty colleagues for helping make Studio U a success.

When creating our studio we also took inspiration from what other schools have done in the self-service video realm. The USB recording and control system used in SDSU's Learning Glass studio was used as a model for room automation and recording. We built on the idea for a PTZ camera between a green screen and a Learning Glass unit based on a studio at UC Davis. And the simple design of Penn State's One Button Studio inspired us to keep the controls user-friendly and intuitive. We took all these ideas and pushed them a step further in what our studio could do and how simple it could be.