



Educators have an opportunity to work with the equipment in the learning lab.



TEACHING THE TEACHER

AV tools are keys to educators' learning lab.

BY MARK MADISON, CTS-D, CTS-I, PMP

Educators today have a host of powerful new technologies in their toolboxes, including video annotation, BYOD and various collaborative devices. Yet, how effectively they are able to use them may be an open question.

Recognizing the problem, the University of Idaho founded the Doceo Center for Innovation + Learning, with the mission of improving teaching and learning in K-12 schools. According to Dr. Royce Kimmons, Director of the Center, that does not mean teaching educators how to use specific pieces of equipment but, rather, helping them understand how to integrate technology into effective teaching.

The laboratory at the Doceo Center for Innovation and Learning includes five student collaboration stations, an instructor's workstation, plus the technology required for video outreach through two-way distance learning, video on demand and Massive Open Online Courses.



An Apple iPad with the instructor's screen, simplifying control of a comprehensive network-based signal routing system.



Photos courtesy Joe Pallen, the University of Idaho Photo Service.

The Doceo Center includes a new collaborative classroom that opened on the U of I's main campus in Moscow ID, with technology designed and installed by my team at CompView Audio Visual in Portland.

Research, Teaching, Modeling

Kimmons described the new lab as both a classroom and an experimental center: a place to train educators and gather evidence to improve best practices. So far, most of the work has focused on workshops and a series of three- to five-day institutes at the lab offered to working educators. "In

these sessions, we're not only teaching methodology, but modeling effective technology use, helping educators experience the difference technology can make when used well."

This fall, Kimmons and Lab Manager Cassidy Hall are offering a semester-long course for U of I's teacher education program, and other professors are using the lab for education-related classes. They have also offered a number of workshops to Idaho professors in the use of classroom technology. "Most university professors have never had formal training in teaching," Kimmons explained.

In addition, Kimmons and Hall have been visiting individual school districts, analyzing their technology programs, recommending improvements and measuring learning outcomes. Kimmons offered that he sees pockets of innovation throughout the state, but little communication from one district to the next. "Our job is to act as a bridge between the schools, taking the best practices they develop and helping them diffuse."

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Designing The Learning Lab

Given the Center's broad and challenging mission, the design of its collaborative classroom/learning lab was something of a challenge. They came to us looking for an ultra-flexible space that would be completely device agnostic so that, if next month a manufacturer comes out with an amazing new interactive product, they'd be able to plug it right in.

The lab is configured as a learning studio with five collaboration stations

plus an instructor's table. Each of these has its own flatpanel display, multiple HDMI and USB inputs, plus AppleTV so they can connect their iPads and iPhones. This is true BYOD, although the lab is outfitted with enough iPads and ChromeBooks for each educator to use.

One requirement for a learning studio is the ability to share audio and video from any of the collaboration stations or the instructor station to any or all of the displays. Here, the CompView

team used a network-based switching setup from Just Add Power instead of a traditional matrix. Just Add Power provides HDMI-to-Ethernet and USB-to-Ethernet transmitters and receivers, but relies on low-cost Cisco network switches to distribute the signals.

The lab currently allows 35 sources of video to be pushed to 15 endpoints, but that can be expanded at a minimal cost. Video sources include the educator devices, a WolfVision document camera, an Oppo Blu-ray player, Boeckeler Pointmaker annotation device, and a Vaddio WallVIEW high-definition PTZ camera. The team used an AMX NetLinx processor for source and routing control, with a 22-inch Planar touchscreen and five dedicated collaboration station iPads for the control interface.

CompView also included wireless annotation through the Doceri Desktop from SP Controls. Using the Doceri Desktop installed on an iPad, any student can take over a PC, control it, annotate its output and record the session for later review.

Interactive Flatpanels

Three 55-inch SMART and three 60-inch Sharp interactive flatpanels serve as collaboration station and instructor displays, as well as inputs into the switching system. To maximize flexibility, the CompView team mounted each of the five collaboration station displays on a Chief flatpanel cart so the room could be configured in various ways.

"One reason to mix these brands of equipment is to try to represent the different systems teachers actually have in their classrooms," explained Jessica Moretti, the CompView Account Executive who worked on the project. Another reason is that Kimmons and Hall want educators to learn to be comfortable with any technology—even systems that have not yet been invented. "We have to train them to be problem solvers, able to find the resources and tools to begin using something new," Kimmons explained.

The CompView team also included a Blackmagic rackmount digital recorder to capture class sessions for

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later viewing over the web.

The team based the audio system on a Biamp Nexia TC DSP, two Shure wireless microphones, a QSC amplifier and six Community ceiling speakers. The Nexia allows them to provide clean audio for voice reinforcement and recording, plus point-to-point audio/videoconferencing. Future plans include the addition of ceiling mics to allow recording of discussions from each of the student tables, and the Nexia is ready for that addition.

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Distance Learning And A MOOC

One of the most challenging parts of the Doceo Center's mission is to provide services to every public school in the state of Idaho. "Our classes so far have been limited to 30 students working face to face, but there's no way we can reach enough teachers that way," Kimmons noted. Beginning this fall, the center is supplementing its in-person offerings with distance learning, online and hybrid classes and seminars.

The Vaddio PTZ camera is at the heart of this outreach. The CompView team set up a number of presets on the camera for ease of setting it to capture what's going on in any part of the classroom. A Vaddio AV Bridge sends video from the camera into any USB device via the Just Add Power distribution network.

The USB connection is crucial because the lab uses only computer-based platforms for its video outreach: Skype, Google Hangouts and Blackboard Col-

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Equipment

VIDEO

- 1 Apple TV screen-sharing appliance for iPads
- 1 Blackmagic Design HyperDeck Studio SSD Deck small rackmount recorder
- 1 Chief PAC716 pole mount for PTZ camera
- 1 Cisco SFP-H10GB-CU1M 10G stacking cable
- 2 Cisco SG500X-24P-K9-NA stackable managed network switches
- 8 Covid custom wall plates
- 1 Extron RGB to DVI scaler
- 1 Extron scaler (set at 720p or 1080i)
- 9 Just Add Power VBSHDMI218A receivers w/audio breakouts
- 34 Just Add Power VBSHDMI418A transmitters w/HDMI pass through
- 2 SanDisk SDSSDX-480G-G25 hard disk drives for recorder
- 1 StarTech UNIDOCK2U docking station for hard disk drives
- 2 TecNec CAT6-48PB Cat6 patchbays
- 1 TMPGEnc Authoring Works 5 video converter, disc authoring
- 1 Vaddio AV Bridge
- 1 Vaddio Hot-Shot preset camera controller
- 1 Vaddio USB 2 transmitter/receiver
- 1 Vaddio WallVIEW HD PTZ camera system w/USB encoder

AUDIO

- 1 Biamp NEXIA TC echo-canceling signal processor
- 6 Community C6 ceiling speakers
- 1 QSC ISA-300TI 70V power amp
- 1 RDL STD-10K mono combiner
- 1 Shure ULXP124/58 dual-channel wireless mic set
- 1 Shure WCE6IT earset mic
- 1 Shure WL185 standard lapel mics

LECTERN

- 1 Asus VE228H 22" 1080p instructor monitor

- 1 Boeckeler Pointmaker CPN-5600 HDCP live video annotator
- 1 Extron DVS 605 presentation switcher
- 1 Extron HDMI distribution amp
- 1 Extron USB switch w/rack panel
- 1 OPPO BDP-103 RS232 Blu-ray player
- 1 Planar PXL2230MW 22" touchscreen
- 1 SP Controls Doceri stylus
- 1 SP Controls Doceri presenters case for iPad
- 1 SP Controls Doceri desktop software
- 1 WolfVision VZ-8+4 document camera

PORTABLE CART

- 5 Chief PFCUB mobile flatpanel mounting carts
- 5 Chief LTMU universal flatpanel mounts for 50"-65" displays
- 2 Sharp PN-L602B 60" interactive whiteboards
- 2 Sharp PN-ZC01 pen trays
- 2 Sharp PN-SV01 viewer software for playback of USB stored content
- 3 SMART Technologies SBID8055i SMART 55" flatpanels

CONTROL

- 2 AMX EXB-COM2 serial expanders
- 1 AMX MXD-1000 system touchpanel (10", 1280x800)
- 1 AMX NI3100 system controller
- 1 AMX NXA-WAP1000 wireless access point
- 1 AMX PS-POE-AF-TC high-power POE injector
- 6 Apple 16GB iPad 2s
- 1 Cisco RV180 basic system router
- 1 Cisco SG500-28P 500 series network switch
- 6 Premier IPM-300 desk mounts for Apple iPad

RACK

- 1 Middle Atlantic EGR-4428 44 space full-height rack w/accessories
- 2 TRENDnet TC-P48C6 48-port patch bays, Cat6 rated

List is edited from information supplied by CompView Audio Visual.

[COMING IN JANUARY 2015]

CLUBWORLD

Aimed at both industry professionals and avid club goers, ClubWorld will showcase the hottest locations, newest products, and latest nightlife happenings through a rich, multimedia experience. Additionally, ClubWorld will also tap into the exploding music festival scene, focusing on the gear, production, and events that have thousands of fans attending throughout the year.

IN EACH ISSUE

NIGHTBEAT

Multiple sections showcasing the current nightlife landscape, including—but not limited to—quick-hitting news in Snapshots, visual photo compilations of Moments, localized coverage of In Your Town, and the latest club technology in Gear

VIP

Q&As with prominent members of the ClubWorld, including owners, lighting designers, sound teams, promoters, resident DJs, and so much more

SPOTLIGHT

A multipage feature on a hot club or festival, telling its story through words, rich photography, and detailed equipment lists

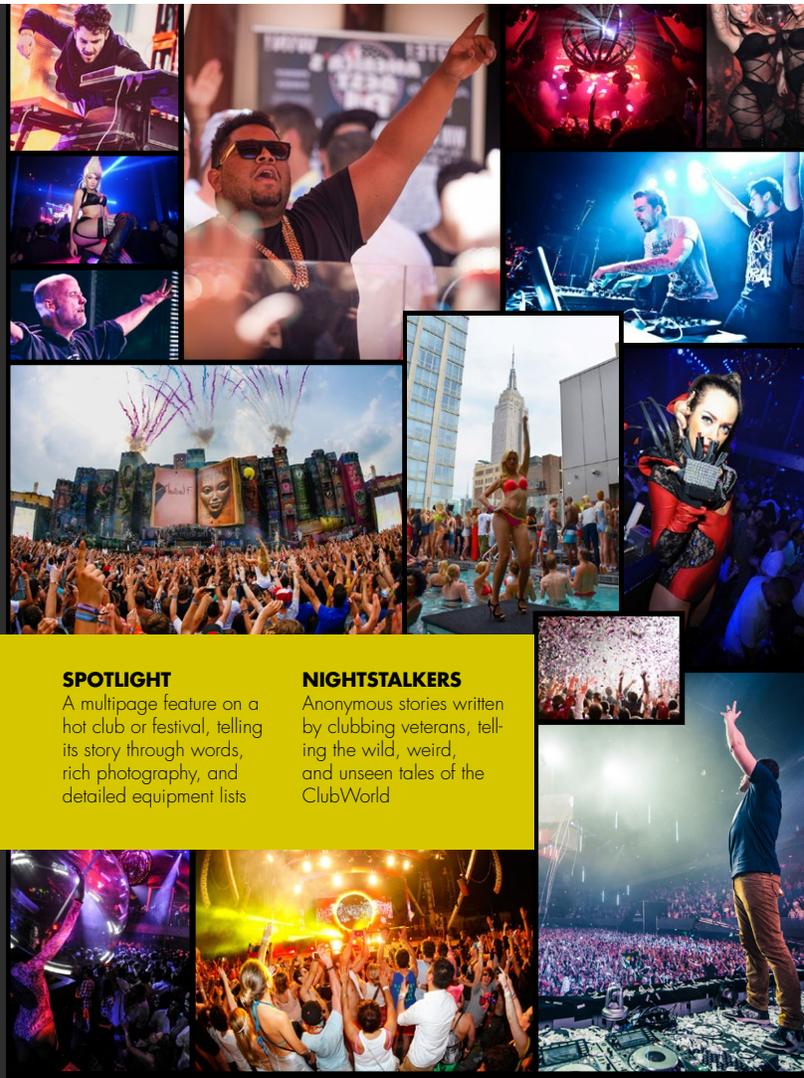
NIGHTSTALKERS

Anonymous stories written by clubbing veterans, telling the wild, weird, and unseen tales of the ClubWorld

MORE INFORMATION

If you have questions or need more information, please contact:

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laborate. "I've used the traditional conferencing platforms, but we need to be sensitive to what the schools have and what they can afford," Kimmons explained. "We don't want people to leave here saying, 'This is great, but we can't do it without a \$20,000 codec.' No, they can do good-quality video now, using readily available tools."

The USB-based Vaddio system dramatically improves the video possible with these platforms. Instead of a fixed-focus webcam, we have a high-end PTZ camera, fully controllable through the AMX system. It's an affordable, high-quality solution.

Furthering Video Outreach

The Doceo staff is furthering its video outreach by offering a MOOC, a Massive Open Online Course, on the topic of more effective teaching using technology. "We have lined up several school districts who will use our MOOC in their professional development programs," Kimmons said. "But we're also interested in helping anyone interested in better teaching." MOOCs have been criticized for the low completion rates many achieve, but Kimmons said that misses the point. "We're here as a resource to be used in whatever way people find valuable. We don't care if everyone completes our course. If some want to use it just to connect with other educators or to find one or two new ideas, that's fine with us."

Kimmons offered that the technology in the lab has been working great. "We wanted to create a space with some shock value. We want the educators to say, 'Wow, I had no idea this is possible,' so they can go back and inform their schools about the technology decisions they are making."

So far Kimmons and Hall have trained more than 2000 educators, who are giving the lab and the sessions taught there very high marks. According to Kimmons, "Our spring and summer groups gave us stunning evaluations, with an average rating of 4.9 out of 5.0. Almost half of the teachers commented that this was their best professional development experience ever."

"I'm really excited to be involved with this effort," added Jessica Moretti, account executive for CompView. "The U of I School of Education un-

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Mark Madison, CTS-D, CTS-I, PMP, is Executive VP of Systems Integration, CompView Audio Visual (compview.com) in Portland OR, with more than 30 years of experience in the audiovisual field. He has completed thousands of AV projects with technology budgets of several million dollars.



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