

Options for Simulation Recording/Debrief Systems

Over the course of several weeks through April 2021, we have looked at options for installing a new video recording/debrief system for the third floor of Davenport Hall, with a future goal of replacing the Axis Camera Station software we currently use in the Metro building. The Axis system operates essentially at no annual cost to the School but lacks desirable features and suffers from intermittent but persistent audio issues.

Decisions about what features are most important and ultimately which system best fits the *School's* needs should be made by the faculty doing the simulations, after consultation with Central IT to ensure they can support the installation and use of the product.

System Requirements

Decisions should be based on basic requirements which are agreed upon by the faculty who will use the system. These are our suggested requirements to begin that discussion:

- Simple and clear controls: easy to start, stop, and play recordings
- Recordings available for playback immediately or within a minimal period of time
- Full screen live view of session with minimal screen lag for viewing in other rooms
- Faculty can watch recordings from anywhere
- Moments in the recordings can be marked and annotated for review
- Multiple cameras with synched playback

Other desirable features:

- Ability to include patient monitor, Anesthesia display, ultrasound, Powerpoint slides, etc.
- Integration with Laerdal and/or Gaumard manikins to record simulation events
- Resource scheduling (rooms, manikins, etc.)
- Reporting options (generally goes with scheduling) for rooms, types of sim, etc.
- Mobile recording options (cart or tripod) for flexibility
- Recordings easily and securely shared with individual students on or off-campus
- Proven Nursing track record with references
- EMR Integration
- Digital zoom when viewing recordings
- Fast/slow playback when viewing recordings
- Integration with Canvas (e.g. Kaltura and Studio, although I didn't find any vendor doing this)

Vendors Offering Recording/Debrief Software

We had initial video conferences to discuss our needs for Davenport with five vendors, with turn-key cost estimates ranging from \$112,000 to \$250,000.

- Laerdal (formerly B-Line) SimCapture
- VALT by IVP

- CAE Learningspace
- SimulationIQ
- KbPort

Quotes were based on a total of six two camera simulation rooms, two debrief rooms with one camera in each, and two classrooms with mobile recording capabilities. The estimates did not include our own costs of network cabling and two mobile debriefing carts at \$2,500 each (\$1,000 for TV, \$1,000 for computer, \$500 for cart). Costs could be reduced somewhat by outfitting fewer rooms or not recording the debrief rooms and classrooms.

Other potential vendors we did not speak with include Gaumard (very slow to respond to our inquiry) and Level3/SimStation (no U.S. Schools of Nursing listed on their website but they may be an option).

Low-Cost Options

We looked at many ways to record video including Zoom, Kaltura Virtual Classroom, Kaltura Capture, the Windows Camera app, Google Meet, Microsoft Teams, and continuing the use of Axis Camera Station, but these are the options I judged most feasible:

- Kaltura Classroom with webcams (can support multiple cameras), using Zoom if needed to broadcast live.
- Canvas Studio with webcams (single camera), using Zoom to broadcast live if needed.
- Blue Iris security software (multiple camera but limited features, used elsewhere on campus)
- Vosaic – cloud-based multiple camera with easy annotation but somewhat clumsy to use, estimate \$10,000 annual cost.

Of these solutions, if no funding is available for a commercial recording system, we believe that outfitting the simulation rooms with web cameras and using Kaltura Classroom may be the best compromise due to its capacity for multiple cameras, full integration with Canvas (including an ability to share videos with students) and unlimited storage at no cost to the School. However, the Kaltura, as with all of the low-cost options, does not completely meet our requirements due to limitations in live view and time needed to process after recording. We would need to pilot this system to be sure it is palatable to faculty.

Assuming new purchases, the cost of hardware (computers, webcams, mics and speakers) needed for any of these low-cost options is around \$2,000 per recording station, plus the two debrief TV carts at \$2,500 each.

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