

RJA's Audio/Visual Program Augments Student Instruction

Challenge. The Feinberg School of Medicine at Northwestern University is facing similar issues as other medical schools across the country: how to use developments from the Information Age to their best advantage to train tomorrow's doctors. Northwestern and its architect engaged Rolf Jensen & Associates (RJA) to develop a comprehensive audio/visual implementation program, to design audio/visual systems and related building infrastructure, to prepare and develop contract document specifications, and to monitor the implementation and installation process for Northwestern's Clinical Education Center in Chicago.

The project called for specifying and installing audio/visual systems in the center's 200-seat lecture hall, two case study rooms, four seminar rooms, a simulated patient training room and two meeting/conference rooms. One of the key updates Northwestern required was to enable critical performance reviews in its 17 exam rooms. The center wanted to enhance the monitoring and recording capabilities of its testing of students who visit patients with simulated symptoms and medical conditions in these rooms.

Solution. RJA's recommendations for system capabilities in the seminar rooms, training room and conference rooms ranged from the basic front screen single image video projection to remote controlled audio/visual systems, including plasma display of video and computer graphics, and voice and program audio reinforcement and reproduction.

RJA also consulted with the design team in regard to millwork detailing, HVAC, lighting, electrical requirements and acoustical treatments. In the lecture hall and case study rooms, RJA specified multi-image slide, video and computer graphics displays for medical training applications, as well as voice and stereo program audio reinforcement and reproduction. Plus there's wireless radio frequency remote control for systems and environmental functions.

The lecture hall is equipped with a primary center screen measuring 7 feet 6 inches by 20 feet and a side screen measuring 6 feet by 8 feet. Video sources for the display system include prerecorded video media, live camera images, computer generated graphic images and other auxiliary displays, such as electron microscopes and X-ray/MRI imaging devices.

For the 17 exam rooms, the center incorporates a recording center for observation, evaluation and archival record of student/simulated patient medical exam procedures using fully digital technology with distribution using the university's local area network and wide area network with a gateway to the Internet.

Instructors can now remotely control simulated patients, manipulating heart rates and other vital statistics, for example, to test how students react to different medical scenarios. Two cameras with audio and visual feed record every test session and save the information in the student's electronic folder. Students and instructors can access these folders to review and critique an individual session performance, as well as track progress made over the course of the four-year study program.

RJA expanded the concept of using dummies in the simulated patient training room and case study rooms. Instructors can now remotely control robotic dummies to simulate conditions such as a heart murmur. The dummies plug in to the audio/visual system for recording purposes and for allowing instructors to interject comments and lead interactive classes.

A central control station features a terminal with two side monitoring displays that continuously display preview signals from all cameras and video sources in the system and one center display for operator control. An intercom system provides two-way communication from the central control console to each exam room. The central control station also includes digital recorders, preview monitors, computer terminals with monitoring and administrative software and an archiving network server.

Result. Instructors now have access to greatly improved audio/visual systems for planning, presenting, sharing and distributing their lesson plans and engaging students in interactive learning. Meanwhile, students benefit from simulated medical exams and enhanced learning tools, and they can digitally record what they learn for future reference.



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