



**Distance  
Education  
Solutions**

## **Folsom College: Dynamic Distance Education on a Minimal Budget A Case Study**

### **Folsom Lake College Scores With Cost-Efficient Distance Education Using ParkerVision Automation**

American colleges and universities have thrived for years by providing face-to-face education in typical classroom environments. In recent years, these same institutions have been faced with the need to provide increased educational opportunities. While the bar has been raised for these institutions to create additional opportunities, their budgets have not necessarily been increased to help achieve those goals in a cost-efficient manner.



Recent developments in technology have allowed higher learning institutions to develop distance-learning programs that reach a wider student audience outside of the traditional classroom. Folsom Lake College in Folsom, California, is just one example of a college taking advantage of these technological advancements. The first community college built in the 21st Century (though classes were offered in portables throughout much of the 1990s), Folsom Lake College quickly established distance education to be a major factor in its course offerings. With satellite campuses in Placerville, California (El Dorado Center) and Sacramento (Rancho Cordova Center), plus a relationship with Cosumnes River College in Sacramento, Folsom Lake launched its distance education program at the beginning of the Spring 2002 semester. Following one semester

of limited success with a smaller-scale distance education system, Folsom Lake purchased a ParkerVision PVTV LEARNING live production automation system for the Fall 2002 semester.

Following a weeks worth of training provided by ParkerVision, the system was launched for the first day of classes. The campus, in its second semester of using the system, produces 35 hours of distance education classes per week with one fulltime director.

PVTV LEARNING is an automated production platform that integrates video, audio, machine and camera control functions into a one-or-two operator station. As traditional switchers, audio boards and cameras are eliminated, so is the need for a full production staff - an important value at a community college with a limited budget. The result is a highly efficient distance education system with extremely high production value.

The main platform of the integrated hardware/software system is operated from a separate control room. Each classroom features three ParkerVision DIGITAL CameraMan 3-CCD robotic pan/tilt cameras student microphone systems as part of the ParkerVision Student Camera System. That camera automatically focuses on a student when the MY TURN button on the microphone is pressed, alleviating the need for the operator to know who is speaking.



The other two robotic cameras are located in the back of the classroom. One is centrally located on the back wall and the other is positioned in a corner. These take care of both the tight shot of the instructor and the wide-angle view of the classroom in the event the instructor walks out of camera range. Unlike in a single-camera setup, students at the far end of the classroom do not notice camera movements. Digital or analog effects can be employed to transition between these two cameras to create a broadcast television look. All three cameras provide a crisp, robust video signal and can be tweaked from the control room using a ParkerVision SHOT Director multi-camera controller.

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Prior to the start of classes in the Fall of 2002, we developed a template of a typical class, on PVTV LEARNING. Throughout the template's timeline are numerous built-in Transition Macro Elements (TMEs) that automatically trigger the next event in the timeline. TMEs built into each timeline include opening and closing camera shots, informational graphics, and audio fades. The audio function is particularly useful for riding levels on soft-spoken students.

The flexibility of PVTV LEARNING is vital to distance education. Since so many portions of each class are off the cuff, the ability to switch from the automated realm to manual operation is crucial. TMEs for PowerPoint presentations and videotapes are built into the timeline, though we are rarely informed if these will be part of the class ahead of time. If the instructor heads into another direction, manual operation is commenced and the automated timeline is halted. To resume automation, the timeline is simply dragged to the next TME.



The user-friendly learning curve is allowing students to occasionally operate the system with very minimal instruction. As the traditional elements are automated, students first learn how to operate the cameras and then move onto slightly more technical projects. Having the occasional student help makes the job somewhat simpler as I can then focus on the routing process that allows for switching between sites during a class. While it is certainly possible to handle both PVTV LEARNING and the routing system, it requires the ability to multitask. However, no more than two operators are required at a given time - a sharp decrease in the amount of operators required for a non-automated approach.



PVTV LEARNING feeds into codecs that are fed to the satellite campuses and onto local cable systems for students at home. A Tandberg 6000 codec feeds a 786 kilobit backbone signal to Cosumnes River College, where the signal is then microwaved to WBS-TV in Sacramento, a wireless cable system, and sent via fiber to AT&T Broadband Sacramento. A Polycom VS4000 is also used to send two ISDN signals at 384 kilobits: one to El Dorado Center and one to Rancho Cordova Center. From El Dorado, the signal is sent via fiber to AT&T Broadband for broadcast over the local El Dorado County cable system.

To further benefit students, PVTV LEARNING feeds into a DVCPRO recorder to record classes for students who are absent or need further reinforcement. The classes are transferred to VHS and made available in the campus library. Four VHS copies can be dubbed simultaneously out of the DVCPRO machine. This is also beneficial for the remote sites. The master DVCPRO tape is saved in the event a VHS copy is lost or damaged.

Folsom Lake College will also look into other avenues of distance education in the future. PVTV LEARNING offers a path to webcasting via the PVTV WebSTATION should we decide to go that route. The college is also looking into servers to allow us to record classes directly into a server from the automated platform. As Folsom Lake College continues to grow and prosper, our distance education reach is also bound to expand. PVTV LEARNING will be at the center of that expansion.