

K-12 School District Offers AP Classes in More Schools

Cleveland County Public Schools adds AP instruction to another school without hiring a new teacher, with Unified Videoconferencing.

EXECUTIVE SUMMARY

CLEVELAND COUNTY PUBLIC SCHOOL DISTRICT

- K-12 Education
- Shelby, North Carolina
- 17,000 students, 2500 faculty and staff

CHALLENGE

- Increase educational excellence
- Improve administrative efficiency
- Reduce costs

SOLUTION

- Replaced separate PBX systems with centralized Cisco Unified Communications for IP telephony, messaging, and video

RESULTS

- Offered AP classes in another school without hiring a new teacher
- Provided a single phone number to reach any district employee
- Reduced telecommunications costs by up to US\$60,000 annually

Challenge

Formed when three school districts merged, North Carolina's Cleveland County Public Schools has 29 elementary, junior, and high schools spread out over 40 miles. "Our biggest challenge is providing an excellent educational experience with limited budget and personnel," says Rob McDaniel, network engineer for the district.

After the merger, the superintendent asked the IT department to meet two goals:

- Increase administrative efficiency by enabling parents and other community members to call a single number to be transferred to any employee in the district. "This posed a challenge because we had many different communications systems," says McDaniel.
- Offer Advanced Placement (AP) classes in

high schools that might not have enough interested students to justify hiring a teacher. "If only five students in a school want to take AP Statistics, for example, it doesn't make sense to hire a teacher," says McDaniel. "And we don't want to ask a teacher at another school to drive 40 miles every day to teach the class at another school."

Solution

Cleveland County Public Schools met both challenges by using its fiber-optic network as the platform for Cisco® Unified Communications and Cisco Unified Videoconferencing.

Single Districtwide Phone Number

Schools now receive their voice, fax, and voicemail services over the network, from Cisco Unified Communications Manager and Cisco Unity® Unified Messaging servers that reside in the district's central office. The only equipment that individual schools need is a Cisco router and Cisco Unified IP phones.

So far, 14 schools are using Cisco Unified Communications, and the IT department is adding three to five schools every year. Every classroom and office has a phone, enhancing campus safety. Using the district's fiber optic network for voice communications has unified all schools in the district and also enabled the district to eliminate certain telephone lines. "In the summer of 2008, we eliminated 45 lines that cost an average of US\$69 monthly, resulting in US\$37,800 in recurring annual savings, and that was just for six schools," McDaniel says.

Unified Videoconferencing

To enable teachers to offer instruction in two classrooms at once, the IT department extensively tested several leading videoconferencing solutions. “Cisco Unified Videoconferencing best meets our needs because it works well with our network and existing equipment from other vendors and is easy for teachers to use,” McDaniel says. “We schedule the connection between two classrooms to start automatically at the same time each school day so that the teachers don’t have to concern themselves with the technology.”

The first year of the program, the district used Cisco Unified Videoconferencing to offer AP Statistics and AP Government to students in another school in the district that did not offer those courses. Class is not always held in the same room, so just before class, the teacher rolls in a mobile cart with the videoconferencing equipment, including a large display and video camera. A classroom aide in the other location rolls in an identical mobile cart. To control what students in each classroom see or hear from the other classroom, teachers use a simple remote control to:

- Pan, tilt, and zoom the camera in the remote classroom to show the entire classroom or just a single student writing on the board or making a presentation, for example.
- Display what the teacher or a student is writing on a smart board, such as a statistics formula
- Show images, such as pages from a book, on a specialized digital camera
- Display the teacher’s laptop screen
- Mute or activate the microphone in the remote classroom: When the teacher calls on a student in another classroom who has a question or answer, the student’s voice is picked up by a microphone so that everyone can hear as if they were in the same room.

The teacher can divide the remote classroom’s video display into up to four sections to show multiple inputs, such as a slide in one section and a student giving a presentation in another.

“Taking advantage of our Metro Ethernet network for video-based instruction enabled us to offer two AP courses in a school where only a few students were interested. We can’t justify the US\$50,000-plus salary for a teacher for a few students, so without the video solution, these students would not have had the opportunity.”

—Rob McDaniel, Network Engineer, Cleveland County Public Schools

Results

Increased Educational Opportunities for Students

“Taking advantage of our Metro Ethernet network for video-based instruction enabled us to offer two AP courses in a school where only a few students were interested,” says McDaniel. “We can’t justify the US\$50,000-plus salary for a teacher for a few students, so without the video solution, these students would have missed the AP opportunity.” AP test scores did not differ based on whether students were in the same classroom as the teacher.

Next-Generation Learning

The Cisco Unified Videoconferencing system records the audio and video of classroom sessions. Students who miss class or want to repeat a lecture can simply visit a website. For students who don't have an Internet connection at home, the teacher can download the recorded classroom session to one of the district's iPods, which the student can take home overnight.

“Cisco Unified Communications cost approximately the same as a new PBX and intercom system. The return on investment includes lower monthly recurring costs, the safety of having a phone in every classroom, and the ability to send text alerts to classroom phones in the event of weather-related or campus safety emergencies”

—Rob McDaniel, Network Engineer, Cleveland County Public Schools

Increased Administrative Efficiency

Cisco Unified Communications has helped Cleveland County Public Schools increase administrative efficiency by streamlining daily operations and containing costs. Even with fewer than one-third of schools using Cisco Unified Communications, the district has already reduced its annual telecommunications costs by nearly US\$60,000 annually. “Every school district in the state is facing mandatory budget cuts,” McDaniel says. “Every dollar that we save on communications infrastructure and phone bills we can invest in programs that improve educational excellence or administrative efficiency.” Sources of cost savings include:

- **Reduced line costs:** Reducing telecommunications lines in just six of the 26 schools has generated US\$37,800 in annual savings.
- **Lower long-distance charges:** The district now sends all long-distance calls over its network to a central point to receive volume discounts from the carrier.
- **Elimination of intercom and bell system costs:** The district uses the built-in speakers of its Cisco Unified IP phones for intercom and bells, using InformaCast software from Berbee, a Cisco partner. “Cisco Unified Communications cost approximately the same as a new PBX and intercom system,” says McDaniel. “The return on investment includes lower monthly recurring costs, the safety of having a phone in every classroom, and the ability to send text alerts to classroom phones in the event of weather-related or campus safety emergencies.”

More Convenient Staff Meetings

The district is also using Cisco Unified Communications for monthly principals' meetings. Instead of all principals driving up to 30 or 40 miles to meet in person, they just drive as far as the nearest high school to use Cisco Unified Video Advantage software, which adds video to the communications experience while the teacher uses a Cisco Unified IP phone. Later, each school will have its own copy of Cisco Unified Video Advantage.

Improved Parent-Teacher Communications

Approximately 1000 teachers and staff use Cisco Unity voicemail to simplify communications with parents and administration. Teachers see a list of messages right in their email inbox and can just click to listen to messages in any order. “Improved parent-teacher communication is an important

factor in academic success,” says McDaniel. “In addition, the school secretary no longer has to take messages for teachers and send a messenger to a classroom.”

Easy Management

“Cisco Unified Communications and Cisco Unified Videoconferencing do not require our IT staff to spend extra time,” McDaniel says. “After we set up the systems, they operate on their own.”

Next Steps

Cleveland County Public Schools plans to begin using Cisco Unified Videoconferencing for more classes, including less-popular foreign languages such as Latin. The local community college is investigating using the district’s system so that one teacher can teach vocational classes in multiple classrooms at once, reducing costs.

The district also plans to give administrators Cisco Unified Wireless IP phones so that they can receive calls to their number from any place on any campus, all of which have a Cisco wireless network.

For More Information

To find out more about Cisco Unified Communications go to:

www.cisco.com/go/unifiedcommunications

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