Walter Payton High School

brings advanced a/v systems to Chicago students

United Visual brings advanced technology to Walter Payton College Prep High School

Chicago's first new high school in 20 years is at the leading edge of educational technology

It's zero period at Walter Payton College Prep High School in Chicago. At 7:10 in the morning, with the sun barely up and the doors barely open, a dozen or so sleepy eyed students are making their way to a third floor classroom to begin their day. It will be almost an hour before the rest of the student body arrives, but these early risers know they are not alone. Across town at Von Steuben High School, the other half of their Latin language class is settling into their seats. For the next 45 minutes these two groups of students will share a teacher and a time period through the newest in videoconferencing technology. It's all part of the ever-expanding world of distance learning, and Walter Payton College Prep is the newest player in the game.

The recital hall at Walter Payton High School features a 40' wide projection screen

Distance Learning is only the tip of the technology iceberg at Payton, which is just the second high school the Chicago Public Schools have built from the ground up in the past 20 years. Payton is not a magnet school, although the concept is similar. Interested students have to test in to the math, science and world language college preparatory curriculum. Out of the thousands that apply, only 200 are taken each year. The school first opened its doors on Chicago's near north side for a single class of freshmen in the 2000-2001 school year. This year another freshman class started, as last year's class became sophomores. The school will be at its 800-student capacity only on its fourth year after opening, with all levels complete in 2003-2004. This gradual growth gives the staff a chance to get acquainted with some very new concepts in learning technology.

Smart flooring and smart desks

This is one totally connected high school, with LCD projectors, networked laptops for every student and media retrieval in every classroom. There's even a state-of-the art recital hall that can broadcast to the whole school. When Facilities Director Marty McGuire moved over from Kelly High School to Payton, it was a whole new ball game. "The nice thing about Walter Payton is that the district was sold on the idea of technology from the get-go!" says McGuire.

And the "get-go" literally means from the bottom up. Walking the halls at this school can be like walking on air. The school put down special easy access flooring throughout the building, allowing cables and phone lines to be laid during construction and before the final floorboards were put down. When changes are needed, the flooring is easily opened up, granting open access to the cables underneath. Unlike older institutions, no one is going to be punching holes in walls or tearing up tile to make this school internet ready. This building was fully wired, from classroom to classroom, from lecture hall to laboratory, from office to auditorium, before the first student set foot in the school.

Every desk in the school is a "smart desk" with dual computer connections, so every classroom is essentially a computer lab. Laptop computers are available to every student. All a teacher has to do is write a request for the laptops, and the technology people deliver them at the appointed hour. Each desk has both a data and electrical outlet where students can plug the laptops in and connect to the internet, the teacher's home page or the school intranet instantly. The vision is that even when the school is at its capacity in 2004/2005, every one of the projected 800 students will have access to a laptop every day.

Every classroom has a ceiling-mounted Mitsubishi LCD projector as well as a wall screen. The projectors are networked to the school's technology control center, which McGuire calls the head-end room, via a media retrieval system. The head-end room houses such an incredible array of sensitive equipment that the school felt it was better not to have it in the classroom. "For instance, we have 20 VCRs. Eight of them have cable tuners, so we can select what channels we want–CNN, PBS, CLTV," explains McGuire. "The teacher can sit down at his computer and look up a catalogue of videos that we have on, say, the civil rights movement. Then when he schedules a video, whether it's on DVD, laserdisc or VHS, he can set it all up right from his computer." The teacher uses his classroom remote to turn on his LCD projector and operate any one of the pieces of equipment in the control room. "We even have an MPEG server, so we can actually take one video, dump it into

This Latin language class originates at Payton but includes students from Von Steuben High School. The distance learning system includes three robotic cameras, four Pioneer plasma displays and an operator's station with source equipment, codec and controls (shown on cover). Instructors use the document camera in place of a blackboard (see photo at right).

our server, and eight different places around school can watch the video at the same time."

According to United Visual's Bill Mullin, such projection systems can make a huge impact on the learning process. "The beauty of these systems is that they are so engaging," says Mullin. "A given student may or may not have much interest in the lesson at hand, but presented this way it will get his attention. And that's at least half the battle." Marty McGuire plans to use the system to show materials created at the school as well as outside. "A teacher can bring in a video he knows he might not need for weeks. We would load it on to the server and when he's ready for it, he just lets us know," says McGuire. "We can even record a morning class, then allow a substitute to replay it for the afternoon class when the regular teacher is gone."

Distance learning

One of the most exciting features of the technology program is the distance learning classroom, which gives teachers and students the ability to study with other classes across the city or even around the world. In this room as many as 30 students can take part in a question and answer session with a lecturer from the Art Institute of Chicago, or an Egyptian Mummy expert at the Field Museum. Eighteen schools in the Chicago public school system are capable of videoconferencing and can tie their classrooms together. For example, the Portuguese language teacher may find herself with six students at one school, five at another and three at still another, all taking the same class at the same time, via videoconferencing. Or a handful of students may find themselves learning from a teacher at a suburban high school, or talking to a research team in the southwest. Since the transmissions are two-way, they have the ability to interact, to ask questions and stay involved.

"The videoconferencing system is far and away the best we can get," says McGuire. That's right down to the four 50" plasma display monitors mounted on the walls. "What has been so distracting to students in the past is the jerky camera movements and sounds of people playing with the microphone. This system is like nothing else out there."

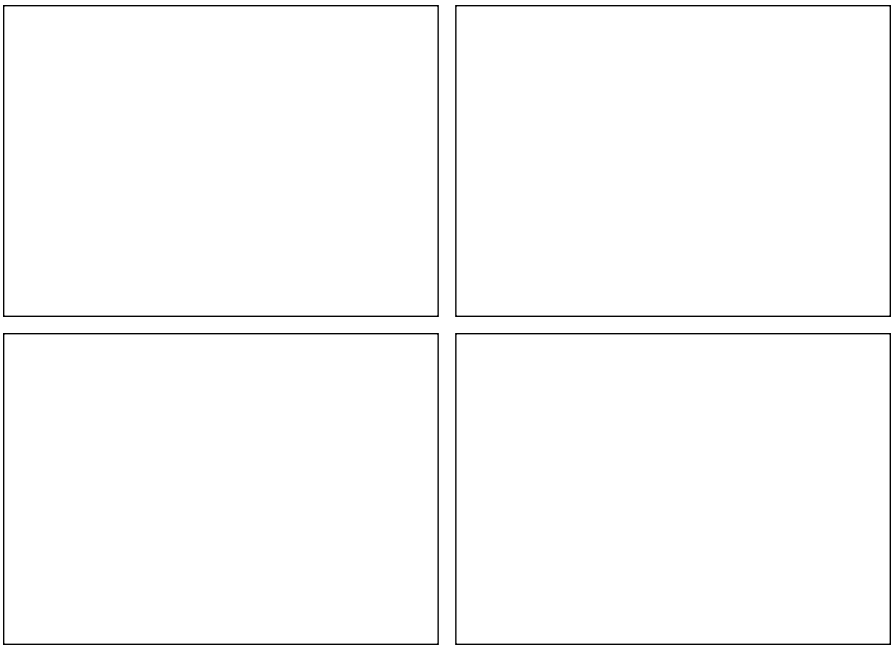
The cameras and microphones used for students are touch activated. When a student has something to say, he just touches a button at his seat, the camera senses the mic is "live" and turns to him. It's the equivalent of raising his hand.

Bill Mullin says using the Tandberg

videoconferencing codec is one reason the system works so well, as it allows a great deal of flexibility in the use of cameras and audio components. Two ParkerVision videoconferencing cameras are aimed at the students. A third camera follows the instructor, who may move around the room wearing a "necklace receiver" that the camera senses. Teachers can include material from a nearby document camera or take a signal from a portable camera, which might be sent to, say, a science lab, for an experiment that can't be moved to the distance learning classroom. " If a science class wanted to do a videoconference experiment, we would go down to the lab with a boom mike and a camera and send the signal back here. Then I send the remote signal to the their science classroom through their LCD projector." That, in essence, makes the science lab a videoconferencing classroom as well, something McGuire hopes to make possible all over the school next year.

Overflow crowds are not unusual in the school recital hall, which has seats for only half the study body. McGuire often sends video from the hall to other areas of the school. "Mike Ditka has already popped in a couple of times to talk to the students. When we have a speaker like him, I can run the signal not only throughout the building but to other schools, by routing it through the distance learning room. This way everyone interested can see him." Those lucky enough to get a seat in the hall can watch the events live and on a 30' by 40' screen fed by a Sony projector. "I was worried about how small the picture would be on the screen, but the projector really does a good job filling up the space," says McGuire.

The school also has a full time computer lab and three smaller lecture halls, all wired to the rest of the building. Informational monitors hang from the ceiling in the entryway, the library, even the lunchroom. When no live signal is being broadcast, McGuire posts the daily event schedule, special notices or even the weekend sports highlights. Visitors and students alike don't have to look far for information.



Projection and video distribution at Walter Payton: computer lab, art classroom, history classroom, cafeteria and head end video rack.

United Visual, working from a design by Chicago's Shen Milsom & Wilke, has been the primary source for all the technology that makes this building so exciting. McGuire says working with United has been great. "Rich Leonard from United is a fantastic installer. He really knows his stuff and has been a pleasure to work with. He's given us equipment training right down to the wiring!" Mullin says the Chicago Public Schools showed great foresight when incorporating this myriad of technology into Payton high School from the start. "It's especially evident in the distance learning room," says Mullin, "They've really prepared for as many ways to communicate as you can find out there."

The Payton legacy

The fact that this school is named after Walter Payton is not forgotten. Time and time again when all hope seemed lost, Walter would come bursting out of a pack of opponents, football safely tucked under his arm, and go for those extra yards. There was as much determination and concentration in his actions as there was talent. He was simply great at what he did, on and off the field. The qualities that made Payton such a success are the same kinds of qualities people at this high school are hoping to instill in every student that attends their classes. His pictures adorn the walls, his accomplishments are often a subject of discussion at school gatherings. But it won't be with a football tucked under their arms that WPHS graduates tackle the future. Whatever path these students may take, they will be well equipped with the new century's technology. All they really have to do is run with it.

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