

Steven K. Hayt Elementary School: Integrating Technology Across the Curriculum and the Campus

A SCHOOL ENHANCES LEARNING OPPORTUNITIES THROUGH WIRELESS CONNECTIVITY

The computer-less classroom, once standard, has disappeared much the same as the one-room schoolhouse. In addition to the traditional "basics," today's schools must prepare their students for the technology-rich environment where they will compete as adults. Today's students have grown up with video games, "special effect" movies, and computers in their homes. They are ripe for the type of hands-on learning that computers provide. According to a recent study, there are currently 82,065 K-12 schools with computers in the US, and 89-95% of these use the Internet as a teaching tool. 95% of the 16 million students in higher educational institutions will be online by 2003. As educators plan for this future, a key question they face is, "How can schools more effectively incorporate the Internet and computers into the curriculum?"

One way to do this is through wireless networking, which allows students to carry laptops that connect wirelessly to the school's network and to the Internet. Lessons are no longer confined to a classroom or a lab. Students can study photosynthesis outside, study muscle groups in the gym, or use the space provided in an auditorium to do large art projects, while also researching those topics on the Internet at the same time. The possibilities abound.

Stephen K. Hayt Elementary School (K-12), located in the Chicago, Illinois, community of Edgewater, recently came up with an innovative approach to integrating technology into the curriculum. They wanted to provide students with enhanced learning opportunities anywhere on campus by combining hands-on learning projects with wireless Internet access. The school administrators contacted Technocrats Consulting, Inc., specialists in educational systems, to develop a plan to achieve this vision.



Technocrats worked with school personnel to develop the following goals:

- Implement mobile computing, so that lessons aren't confined to the classroom
- Design a system that lets students face the teacher rather than the wall where the network connection is
- Continue to utilize the investment made in Mac and PC computers and software.

To accomplish these goals, Technocrats needed to implement a single wireless networking system throughout the school that worked with Hayt School's existing PCs and Macs. Technocrats provided a solution that met these requirements cost-effectively and ahead of schedule. This solution utilizes Proxim's Harmony™ wireless networking solution and allows both Macs and PCs to be recognized on one wireless LAN system. All of the school's 65 laptops (50 Apple™ iBooks™; 15 Dell Inspiron™ PCs) can be used at the same time on the same LAN from anywhere on the campus. Students can access the Internet, the school website, classroom files, lesson plans, and collaborative projects from any machine from anywhere on the school grounds.

THE WIRELESS NETWORKING SOLUTION

Proxim's Harmony solution was chosen for its flexibility and investment protection. The Harmony wireless network supports the leading networking standard, IEEE 802.11b. Plus, Harmony is designed to allow easy and inexpensive migration to new wireless standards as they become available, while maintaining the same configuration and management interface, without disturbing the existing installation. With their Harmony solution, Hayt School has been able to connect all of their existing notebook computers wirelessly to their network, while assuring that their investment in wireless networking can be leveraged when they are ready to move to a new wireless technology in the future.

THE INSTALLATION PROCESS

The initial call to Technocrats was made on April 27, 2001. By May 29, students were logging onto the new wireless LAN from both Mac and Dell PC laptops. To make sure the learning environment was not disturbed, technicians installed the entire wireless network over the 3-day Memorial Day holiday.

The Wednesday before, Technocrats did a site survey, mapping exactly where each access point would be placed, the coverage range of each, and its channel designation. Once this was done, the access point channels were programmed before bringing them to the school. Technocrats also customized the solution to ensure that both the PC and Apple iBook notebook computers could run seamlessly over one wireless LAN.

During the 3-day holiday, technicians installed 49 Harmony Access Points - 44 in classrooms and the other five in the auditorium, cafeteria and main office - to provide coverage throughout the school. Because of their range, the 44 classroom access points actually cover 55 rooms. The access points have been placed so that their different channel signals do not interfere with each other. Also, though the channels are different, a student walking across campus with a "logged on" laptop is not aware of the different channel or signal changes entailed as he travels from one access point coverage area to another - like a cell phone, this is invisible to the user.

WHAT THIS MEANS FOR STUDENTS

Teachers and students have already benefited from this new-found liberty. The 3rd grade classes have taken laptops into the cafeteria, taking advantage of the larger space to create life-sized drawings of the human form. They then used a correlating student Internet learning site to identify and label the different internal organs.

7th grade students are using the laptops to participate in the Northwestern University Collaborative Project. This project works with individual teachers, school project teams, and multi-school collaborations in school districts throughout Illinois. Students are able to use the resources of participating museums, libraries, and cultural institutions for innovative, web-based learning opportunities.

One class created a "Wonderful World" environmental slide show, and saved the file on the server. They were then able to present their work in their classrooms and to other classes in the auditorium.

FUTURE POSSIBILITIES

School administrators are already looking toward the future possibilities of their new wireless LAN. They are planning a formal keyboarding program that will enhance the students' ability to use the laptops to fullest advantage. Because any hand-held Windows CE device can be recognized on their LAN, the school is also contemplating how these can be used to enhance the curriculum.

According to Linda Smentek, Technology Coordinator for Hayt School, "The new system has enhanced learning tremendously. The laptops integrate technology across the curriculum, and by having such mobility, you can teach in a much more hands-on way, wherever the lesson happens to be. We're excited about the new opportunities - a lot of which I'm sure we haven't even discovered yet."



Proxim Corporation
935 Stewart Drive
Sunnyvale, California 94085

tel: 800.229.1630
tel: 408.731.2700
www.proxim.com