



Lake Tahoe Hits the Jackpot with Technology-Rich Learning Environment

About Lake Tahoe Unified School District

Lake Tahoe is a California resort community near the Nevada border in the Sierra Nevada. The Lake Tahoe Unified School District (LTUSD) operates six schools, working collaboratively with parents and the community to provide a quality learning environment in which all students develop competence in basic skill areas and are prepared to be responsible, contributing citizens.

Situation

When some of its students did not make adequate yearly progress, Lake Tahoe USD renewed its commitment to improving test scores and increasing equity across its schools. Officials were especially interested in one to one computing – providing every child with a netbook and Internet access to promote learning – but had to move carefully because of the costs and concerns about Internet safety.

Solution

Recognizing the power of technology to engage students and improve their performance, LTUSD launched a pilot program with the help of AT&T to distribute netbook computers to about one-third of its student body. The powerful yet inexpensive computers provide Internet access via AT&T Wi-Fi and 3G connectivity, giving students an instant connection to information in school and at home; AT&T Web Security prevents access to inappropriate content. After seeing almost immediate increases in student engagement and achievement, officials decided to expand the program to include 3,000 students in grades three through twelve for the 2011/12 school year.

High Expectations for Low-Performing Schools

Lake Tahoe is one of the world's premier vacation destinations, with world-class entertainment, mountain and lake resorts, and a wealth of adventure sports. Most people, however, consider Lake Tahoe itself to be the area's main attraction, a pristine blue wilderness of timeless beauty.

About 21,000 people live year-round in South Lake Tahoe, where the Lake Tahoe USD serves more than 3,800 students from the resort community. A surprising 60 percent qualify for free or reduced-price lunches.

The district has high expectations for its students and promotes literacy as the foundation of learning. When some of its schools were

identified as program improvement schools because students did not make adequate yearly progress, officials redoubled efforts to give every child the opportunity to achieve success. Educators believed that they could engage students with technology, and so began exploring how computers could drive student performance, help them become lifelong learners, and prepare them for higher education and the workforce. "Providing teachers with appropriate technological tools allowed them to individualize instruction in order to re-teach or extend learning through a highly motivating digital instructional delivery system that matches students in the 21st century," said Dr. James Tarwater, Superintendent of Lake Tahoe USD.

Becoming comfortable with technology requires more than a weekly trip to the computer lab; educators understood the need for an ambitious plan that would put technology in the hands of every student in every class, every day, and designed a pilot to test their assumptions. Aside from the need to find affordable devices, there were some other concerns. Lake Tahoe required a simple way to provide Internet connectivity to students in and out of the classroom and had to ensure that the computers met the

Lake Tahoe USD Facts

- **Business Needs**
Improved academic performance for all students
- **Networking Solution**
Netbook computers with content filtering accessible from Wi-Fi and the AT&T mobile broadband network
- **Business Value**
Increased student engagement and collaboration stimulate learning; enhanced accessibility for all extends the school day
- **Industry Focus**
Public education
- **Size**
3,800 students



requirements of the Children's Internet Protection Act (CIPA), a federal law that requires schools and libraries to block student access to offensive Internet content.

The district also needed a strong buy-in from teachers, who had to become more than just mechanically adept. "We want our teachers to be comfortable using technology to adjust their curriculum to meet student needs," said Dr. Tarwater. Finally, Lake Tahoe required a way to deploy the computers without burdening the district's small IT staff.

Increased Collaboration and Academic Performance

Although officials considered other proposals, Lake Tahoe chose AT&T to assist in launching the pilot. AT&T worked with Insight, a large systems integrator and hardware reseller, to help select the computers: affordable netbooks that provided significant savings over laptops. AT&T provided a range of connectivity options for accessing the Internet that included local area networks, Wi-Fi and the AT&T mobile broadband network. This allows students and teachers to use the computers in and beyond the classroom. "Digital students in this era have responded strongly to the technology being provided to them by completing their class work and homework in the core subjects utilizing software programs that give instant feedback and that send a variety of reports to the teacher," said Dr. Tarwater. "This is a more effective and efficient way of monitoring student achievement."

To control the Internet content students can access, the district uses AT&T Web Security. The network-based service provides adjustable filtering through a web-based portal. The district can offer age-appropriate access for its 3rd through 12th graders, while preventing all from accessing offensive sites. The service doesn't require the installation and management of additional hardware, making it easy for the district to use.

After an initial pilot of 30 netbooks, Lake Tahoe distributed 1,000 netbooks to students, with impressive results. "In the hands of students, these devices increase collaboration and academic performance, creating a technology-rich learning environment that students are comfortable with," Dr. Tarwater said.

Teachers saw an immediate difference in students who received the netbooks. "What we found was phenomenal. Typically, about half of 6th graders complete homework assignments," he said. "As soon as we integrated the netbooks we saw 100 percent engagement. This was the biggest thing."

An Affordable, Easy to Manage Solution

In the first stage of its pilot Lake Tahoe IT staff imaged its netbooks with word processing, calendar, email, spreadsheet and presentation applications. However, AT&T engaged Insight to take over this time-consuming task so the netbook deployment did not place a burden on the district's small IT staff.

"Now no one on our staff has to touch the netbooks," said District IT Director Ken LaMascus. They're shipped ready-to-use to district libraries, where students check them out just like books. If a netbook develops a problem students just exchange it for another one.

LaMascus appreciates that the computers arrive ready to use, and the fact that the district was able to distribute them to so many students without a large initial capital outlay. The netbooks are a recurring

amortized cost, which has enabled Lake Tahoe to proceed rapidly in getting them into the hands of students. Additionally, AT&T provides mobile Internet connectivity.

Lake Tahoe saves by using the AT&T network rather than struggling to maintain a proprietary network for the school district. "I no longer have to come up with a plan every year requesting more money to support our network growth," LaMascus said. "AT&T is in the business of networking. They're the ones who should be managing networks for schools – not employees trying to stay up to date with today's and tomorrow's technology."

"We can provide equitable access across all levels. Now it's not just the 'haves' who have Internet access – now every kid, the 'haves' and 'have-nots,' can have a computer."

– Dr. James Tarwater, Superintendent, Lake Tahoe USD

Closing the Digital Divide

Because the netbooks come equipped with AT&T LaptopConnect that enables Wi-Fi and wireless connectivity, students can access the Internet from home even if they don't have an Internet connection there. This lengthens their learning time, an important factor in improving academic outcomes. Students log on after school to view assignments, complete homework, check their work and upload it to teachers. The process enables teachers to see who needs extra help and determine if they need to re-teach any material. They can set security rights that enable students to share their documents with one another and easily contact students individually or message the entire class.

Students who are ill or otherwise unable to attend school can use netbooks to keep up with their courses. The 50 Lake Tahoe skiers and snowboarders and other student athletes can pursue their studies when they travel the competition circuit. "Students feel empowered because they have an effective tool that makes a difference in terms of rigor and relevance," Dr. Tarwater said.

"Teachers immediately understood the efficiency and effectiveness of introducing the netbooks, but what hooked them was seeing how the kids responded." The platform LTUSD selected is Live@edu. This platform enables students who may be working on a particular problem at home to email each other for support; something one would never find in a pencil and paper environment. Cloud computing allows students the ability to check their homework before uploading it to the teacher, which instills more pride and a sense of achievement.

Finding a way to excite students about learning was reason enough to expand the distribution of netbooks to all students, but Lake Tahoe USD quickly discovered other compelling benefits. "We found huge dollar savings," Dr. Tarwater said. Lake Tahoe now uses digital textbooks instead of expensive hardback books that must be replaced often. One AP chemistry text, for example, was \$142, and most students need between four and eight textbooks a year. "It's not even a choice for us as educators anymore," he said. "With netbooks we're providing mobility for all students and it saves significant dollars."

Even more important, giving students a netbook and connectivity helps Lake Tahoe USD address the digital divide. "We can provide equitable access across all levels," he said. "Now it's not just the 'haves' who have Internet access – every kid, the 'haves' and 'have-nots,' can have a computer. This is the first time in my 44 years that I can say that all kids have equal access. Our students have entered into the most exciting and engaging time I've ever seen."

Within the year every Lake Tahoe student from grades three through 12 will have a netbook. "Overall, we feel that we are closing the digital gap," Dr. Tarwater said. "One to one computing is improving academic performance. We're monitoring it now and will see the results when we take our California State Tests and compare our groups. We hope that as teachers become more and more effective we'll see higher and higher achievement. Our expectation of performance has gone way up."

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