

Your **ESSENTIAL GUIDE** to rolling
out a tablet project in your schools.

TABLETS!

AS AN ADMINISTRATOR, YOU HEAR IT all the time: Tablets increase student engagement and they help personalize instruction. And with enough support, even the most tech-phobic teachers will come around. There's also positive financial news: By phasing out textbooks, you'll see substantial savings long term.

There's never been a better time to roll out a tablet program. Between tablet PCs, the iPad Mini, and a host of new Windows products that hit the market early this year, there are more choices than ever for districts interested in putting a device in each student's hands. That's good news for educational technology administrators: Competition means better service and pricing. Just last year, mobile device sales to K-12 institutions grew by almost 30 percent.

But making the best hardware choice is just one of the challenges for districts interested in implementing a mobile strategy. What about wall-to-wall Wi-Fi? Teacher training? Maintaining thousands of devices? Oh, and then there's the question of paying for everything.

In this, our tablet rollout guide, we

cover these issues and more. Whether you're a large district, like Riverside Unified in California, or a much smaller one, like Cardinal Community Schools in southeast Iowa, read on to learn about the potential and pitfalls of going 1:1.

Choosing Hardware

If you're reading this guide, you've probably resolved your initial question—Why tablets?—and are ready to drill down. But if not, here's further evidence.

Run a pilot: In Downers Grove, Illinois, district leaders started small, launching hybrid learning labs that used both textbooks and iPads. The devices went home with kids in five classes for three weeks at a time.

"We got an understanding of what 1:1 would look like district-wide," says assistant superintendent of curriculum and instruction Matt Rich. Downers Grove is small, with only 5,000 students, but administrators had a clear idea of how tablets would fit into instruction. "We wanted stuff that would help kids with executive functioning, that would be their go-to devices for calendaring,

FROM SECURITY TO PD

BY KATE RIX



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explains Rich. "In just three weeks we saw students programming assignments into their calendars and searching for materials."

Enlist your homegrown experts: Robert Guritz, technology director for Bowling Green R-1 School District in northeast Missouri, spent two years investigating what type of 1:1 technology would work best for the district. Would tablets save money if they replaced textbooks? Would they just supplement the curriculum?

When the board of education gave the district the green light to buy tablets, Guritz enlisted the expertise of the district's most knowledgeable customers: high school students.

The district decided to compare Android tablets from Vizio and Lenovo to zero in on what type of device they liked best, Guritz says. After more research, the teachers on the committee recommended Lenovo for middle and high school students and Vizio for the elementary school classrooms.

"Our teachers thought the Lenovo tablets were more productive for producing documents, while the Vizio tablets were better for enrichment activities and downloading games," says Guritz.

Look for leverage: Manufacturers will often let districts test out products before committing to a contract. In Clear Creek Independent School District outside of Houston, chief technology officer Kevin Schwartz took bids from Samsung, Chrome, Apple, and Dell. Dell made the best final offer, including expanded professional development in the package.

"We gave the devices to high school students to review," says Schwartz. "They rated them according to a rubric and provided opinions about how the devices performed and how they might work for younger students. We didn't want seven different devices."

Installing Wall-to-Wall Wi-Fi

No matter what device you choose, the Wi-Fi has to be in place.

Upgrade first: Make sure your wireless system is up to snuff before committing to a 1:1 program.

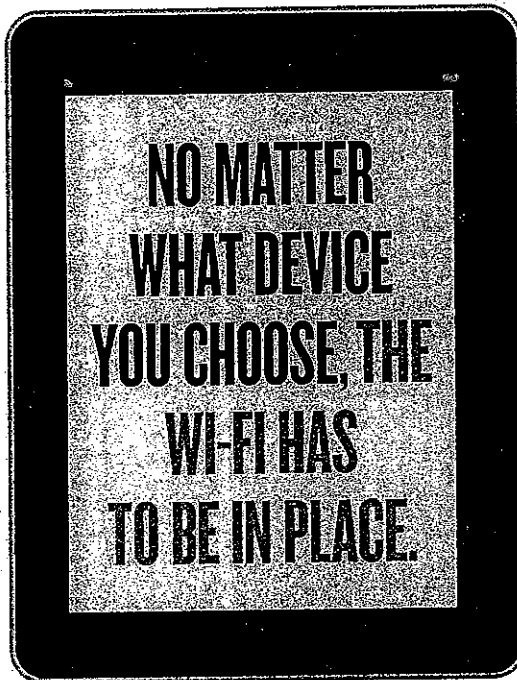
Like other districts, Clear Creek schools began expanding wireless capacity before they had decided on a device. In January, the district rolled out entirely new wireless infrastructure, including core routers, starting with the upper grades. The middle- and

elementary-grade buildings were due to be completed over the summer.

"We knew that the high schoolers would need it first, even to use the existing laptops," says Schwartz.

The district paid \$6.4 million for the upgrade, funded in part through a community bond measure.

Tap into the community: Big districts may not need to provide centralized Wi-Fi. California's Riverside Unified School District operates a wireless local area network, which allows free Wi-Fi access for classroom users across the district.



A password-protected network serves the district's business units. For roaming student access, the district relies on open networks via the city of Riverside, local libraries, a community center, and even a nearby Starbucks.

"One of the myths is that districts need full wireless access," says Jay McPhail, Riverside's director of educational technology. "We ensure there is classroom wireless and extend out from there."

Bulk up: Not all areas have such abundant Wi-Fi connectivity. Downers Grove installed 1 gigabyte of fiber throughout the district, and each wireless point can handle 60 devices—or one for every two classrooms—but they're retrofitting over to one wireless node per classroom.

"At times this can be a networking challenge," says Rich. "Many of our buildings are older, and we have a wide variety of building designs, so each situation is unique."

Spotty access is not an option for districts, of course, and Rich recommends open communication about bumps in connectivity. "Early conversations followed by swift follow-up to feedback leads to a high degree of investment and trust," he says.

Professional Development

Device and software packages often include technical support and professional development, but ultimately every district must have its own plan for staff support.

Take training online: Teachers in Riverside train at their own pace using Haiku learning management software. The program includes 150 hours of online training, is accessible to teachers 24/7, and features help from expert teachers and discussion groups.

"They can't fail because they move forward as they master the material," says McPhail. "We treat our teachers the same way we treat our students."

Self-select: When Downers Grove schools began developing their Learning Labs, which integrate tablets and textbooks or other printed materials, they asked grade-level groups of interested teachers to volunteer for a three-week pilot.

"We believe that teachers need to own the process and be invested. They needed to volunteer to take this risk," says Rich. "That first year we had over half of the K-6 grade teams apply."

From that pool, 62 teachers and their classes (totaling 1,350 students) were selected to participate. For three weeks, the groups rotated through Learning Labs. Technical training took place during staff development days, but only in the context of something specific teachers wanted the kids to learn.

For the 2013-14 school year, the district plans to expand the tablet program to entire grade levels. In three years, Downers Grove could be completely 1:1.

"We have faith that it will show results on a large sample size," Rich says. "We've done the finances. We could bring the entire district along if we take a measured approach and do it for the right reasons."

Budget Decisions

In some districts, tablets replace textbooks entirely, making the funding for textbooks immediately available for

tablet purchase and maintenance. Where that isn't the case, as in Downers Grove and Clear Creek, the districts come up with other funding streams.

Bring the community along: Eight years ago, Clear Creek high schools provided 2:1 access to HP laptops on carts. Most of those machines have since worn out, says Schwartz. This spring the school district won voter approval for a bond measure to generate \$45 million for educational technology. About \$18 million will pay for the 1:1 tablet program in grades 4–12. The remainder will fund the district's wireless network, servers, projectors, printers, and other technical support.

Other districts ask families to pay for the use of tablets. In Downers Grove, district leaders are weighing whether to levy an annual fee of \$150 per student for the 2013–14 school year. The fee would pay for tablets as well as new Common Core resources. They've already begun building their case for the family fee.

Wait for the tipping point: When Riverside started introducing tablets, they also shifted away from textbooks. Before they began using digital materials, teachers in Riverside used to hand each student \$720 worth of textbooks every year. Tablets average about \$200 apiece and the content is available at a third of the price of textbooks.

California state law requires every student be provided with a textbook if they request one, so the district purchases textbooks even though many are not used. "We can save money in the long run," says McPhail, "once we reach the tipping point. Right now we're running parallel systems. At some point, the state and the district will have to decide about going one way or the other."

Finding & Storing Digital Materials

Tablets give teachers the freedom to find teaching resources online and also to work directly with students to build digital literacy and access materials. The trick is finding the best stuff and making it accessible to everyone.

Look for scalability: Some districts aren't comfortable storing resources and student records in cloud-based networks like Dropbox. There are other products that are just as easy to use that don't present security issues.

Microsoft Office, for example, offers everything that Clear Creek schools want for digital material storage.

"The app deployment capability is huge, and we have access to a central file system," says Schwartz. "And we are

moving to an enterprise-scale network. What works at home doesn't necessarily work for a school district."

Using the social learning platform Edmodo, social studies teachers in Bowling Green ran an extensive mock legislature project. Teachers were able to store and share content with one another via Edmodo. Before the opening of Missouri's legislative session, students researched, wrote, and submitted their own bills into Edmodo files. Student committees accessed the bills and then voted on each one.

Select for flexibility: A good system encourages teachers to be creative. When Cardinal Community Schools in Eldon, Iowa, chose Android-based Kuno tablets for their 1:1 program, the package came with some management features. But for storing instructional materials, the district uses CurriculumLoft.

"I can get pretty granular about pushing out apps, either hitting a specific teacher who requests it for one student or hitting the entire district," says Cameron Chamberlin, the district's technology director. "Students

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access CurriculumLoft to store work, and teachers can push out assignments and tests.”

Apps for Students & Teachers

As an administrator, you already know how helpful apps can be for organization, communication, and teaching. Here’s how some districts are finding and using apps in comprehensive 1:1 programs.

Find a good package: Some districts find wholesale packages provide everything they need. In Clear Creek, the Microsoft Office suite that came with the district’s new Dell Latitude 10 tablets had the pdf annotator and audio notes recording tool that teachers and students wanted. “We’re putting in a core set of apps and then letting it evolve,” says Schwartz. “And if students want another app, they can buy and install it.”

Get student input: Finding the best apps is another opportunity to tap into student expertise. Cardinal’s Chamberlin assembled a tech team of high school students to help him identify the best online tools for teachers and students.

Watch kids soar: You’ll never know how good or bad an app is until you see it in action. When a third-grade math class in Downers Grove headed out on a scavenger hunt, they had their iPads with them. Using an app called Coach’s Eye, students hunted for certain types of angles. At home later that day, one of the students discovered more angles in an unexpected place.

“She was eating a pretzel and there was a right angle and an acute angle,” says Rich. “She charted it on her iPad and made a 30-second movie. She’s seeing real-world connections on the third day of the Learning Lab.”

Security

Districts have varying philosophies about the best approaches to protecting students, information, and equipment.

Choose a device with filters: When Cardinal schools were looking for the best device, security was top on their must-have list.

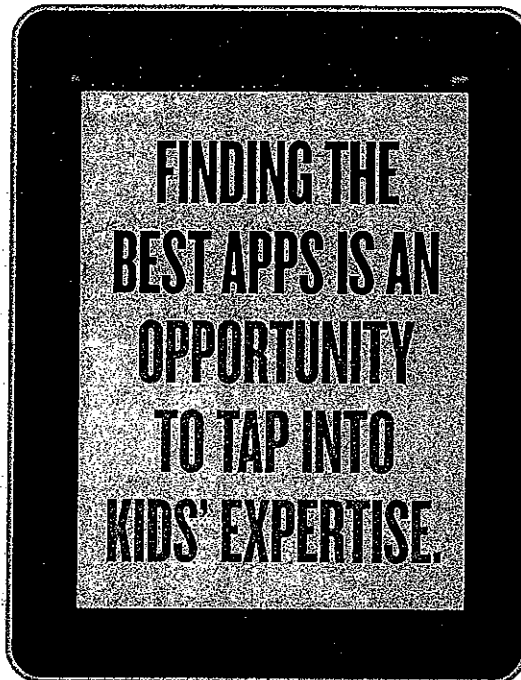
“MacBooks are so easy to circumvent,” says Chamberlin. “I have 500 little hackers here, and there are videos on YouTube that show you how to reset admin passwords.” His district’s Kuno tablets have built-in filters so security hasn’t been a problem.

Emphasize good digital citizenship: Four years ago, when Riverside district

officials were putting their tablet program into place, they thought they would need a mobile device management system to query machines for viruses. They have since changed their minds.

“We found that MDM solutions are focused on security and not education,” says McPhail. “All they really do is keep our students off the network even if there is no real threat. In this environment, you can’t manage and control. We focus on the conversation about digital citizenship.”

McPhail is quite sure that setting



students free on unlocked devices produces better results than putting up firewalls. He points to a 2011 study that involved algebra students at Riverside’s Earhart Middle School. Students who used traditional textbooks scored 59 percent proficient/advanced on the state test, while students who used a tablet loaded with Houghton Mifflin Harcourt Fuse software hit 78 percent proficient/advanced.

“We unlocked the device so students could add their own music and pictures,” says McPhail. “Not only did algebra achievement increase, what drove that was that kids were reading the material on their devices and listening to lectures at home multiple times.”

Control who has access: Riverside’s business network, where personnel and student records are stored, has a traditional firewall built in. Students only have access to the district’s educational network.

McPhail notes that most students use mobile devices that include antivirus and malware detection and prevention systems. But he also stresses the value of explaining the “why” to students.

“Our students are well aware of why they don’t want viruses,” he says. “Viruses interrupt their experience and they can lose personal data on their machines.”

Get parents wired: Part of the digital citizenship conversation involves meeting with parents. In Clear Creek, students cannot take devices home until parents attend a training focused on the purpose and potential snafus of using tablets. It’s important for parents to understand, Schwartz says, that any child who has a smartphone has already had access to the Internet and needs supervision.

“When questions come up around what students have access to, I ask parents, ‘Do you check your kid’s cell phone now?’” says Schwartz. “That evolves into parents realizing they can have some role in keeping their kids safe on the Internet.”

Clear Creek uses Symantec Endpoint Protection to remotely manage the devices and iboss for filtering. A committee of parents helped develop policies about managing and filtering, and the district uses Active Directory to implement those recommendations.

Mobile Device Management

With thousands of mobile devices floating around in the hands of children, tech directors need help to virtually manage and keep track of problems. **Go remote:** Some districts, like Bowling Green, stick with what they were already using to keep in contact with devices.

“We are a Novell shop,” says Guritz. “We can push apps out, shut cameras off, and the mobile management system can easily log in to fix problems. I didn’t have to touch most of the tablets all year.”

Shop wisely: When Cardinal schools were looking to replace their MacBooks contract, the top two considerations were cost and management options.

“We went back and forth, but Kuno gives me all the management features I need,” says Chamberlin. Built-in filters and the CurriculumLoft app allow the district to store and share content while synchronizing with all the tablets students are using. And students can’t easily delete or install apps. That’s having your cake and eating it, too. ■