

Rethinking Tablets in K-12 Education

Solving common management challenges



Introduction

Tablets are becoming ubiquitous — over 100 million had been sold by the end of 2011, and sales have been rising ever since.¹ While all sectors of society are experiencing rapid increases in tablet usage, a significant transformation is occurring in the field of education. The trend toward widespread classroom adoption of tablets is still in its infancy, but the first shockwaves are already being felt.

Compared to other mobile devices like smartphones, tablets have not experienced as much resistance from tech-cautious schools, teachers and staff. Several K-12 districts, colleges and universities have launched pilot or school-wide programs for tablets. For example, Fargo Public Schools, Southern Illinois University, Spartanburg School District 3 and Westwood Independent Schools have all deployed enterprise-ready Windows 8 tablets to their students and teachers.² According to a recent Harris Interactive online survey, 53 percent of IT decision-maker respondents have already deployed tablets in their schools.³

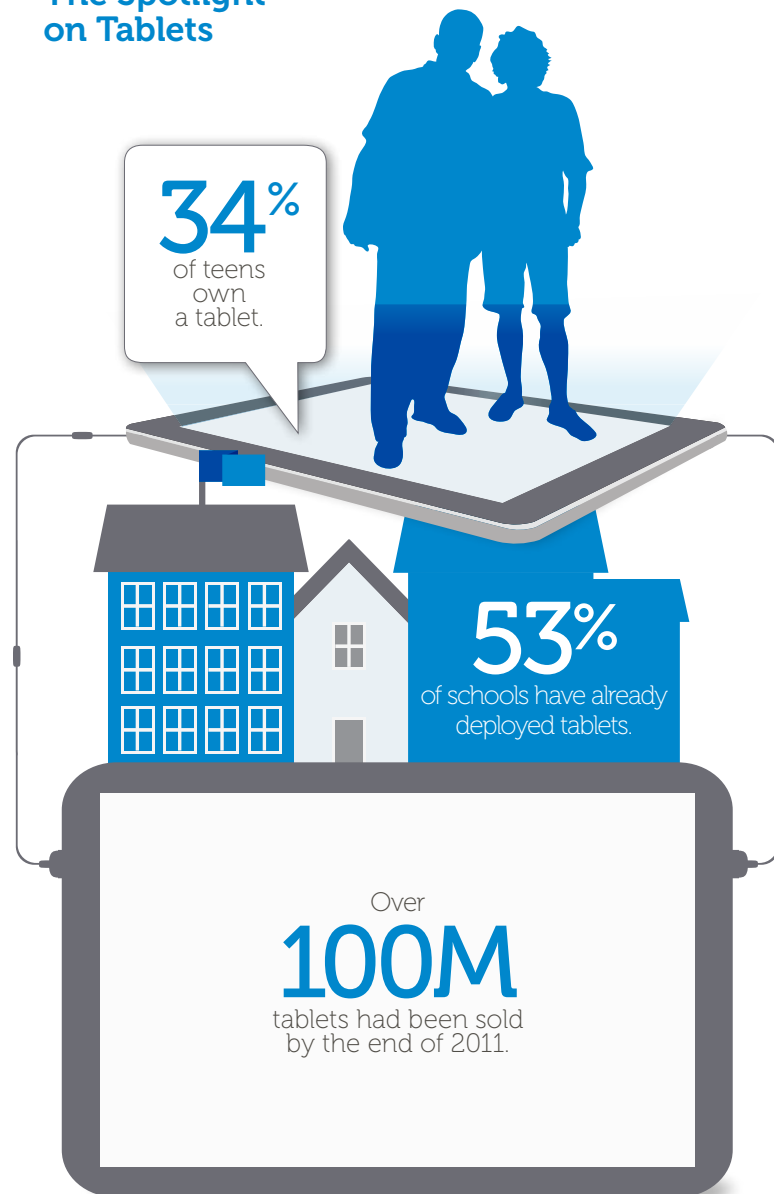
Put simply, with more schools embracing mobile devices, the tablet is becoming a top device choice due to the numerous benefits it brings to the learning environment. Multiple factors are driving this enthusiasm. The 2012 K-12 Horizon Report listed tablets as a “technology to watch” on the near-term horizon, stating: “Because tablets are able to tap into all the advantages that mobile apps bring to smaller devices but in a larger format, schools are seeing them not just as affordable solutions for one-to-one learning, but also as feature-rich tools for all sorts of assignments as well, often replacing far more expensive and cumbersome devices and equipment.”⁴

Of course, students themselves are already ahead of the curve — 34 percent of teens owned a tablet as of spring 2012, an increase of 12 percent from 2011, according to asset management firm Piper Jaffray.⁵

That said, tablet technology isn’t without its challenges, and the upkeep of a tablet program in schools requires some finesse. Not all tablets are created equal; some serve the educational marketplace better than others. Furthermore, as tablets become more pervasive in classrooms, IT departments must contend with their impact on the network and the device management issues that will certainly arise.

Centralized management solutions can help alleviate this problem by integrating new tablets into an educational institution’s existing device management system. IT staff can then maintain and update the tablets’ software remotely, the same way they do for the institution’s desktops and laptops. To make this integration possible, however, the tablets in question

The Spotlight on Tablets



need to possess the required characteristics, chief among them a system-compatible operating system (OS).

Possessing the right technology can simplify the situation significantly — for both educators and IT administrators — so that the focus can stay on what matters most: students' education.

This Center for Digital Education thought leadership paper expands on the challenges of tablet management in K-12 education. It discusses how tablets can cause headaches for both teachers and IT employees, how schools are attempting to cope with sub-optimal tablet solutions on an ad-hoc basis — and how at least one OS has proven itself up to the challenge of operating smoothly in the educational environment alongside pre-existing machines.

“Making Do” with Common Tablet Challenges

There are several challenges that K-12 school districts face when it comes to managing tablets, both during and following deployment.

Compatibility with Existing Systems

Many tablets run on a unique OS and cannot be integrated into an organization's existing device management system. If a tablet's OS is different than the OS used by a school or district's existing machines, it will be difficult — if not impossible — to bring the tablet under the same management umbrella. This will necessitate managing the tablets separately, increasing the burden on IT staff, both in terms of time and money.

Cost and Return on Investment

At a time when many school budgets are shrinking, tablets seem like a cost-effective option compared to higher-cost laptops or even desktops. However, some tablets may not provide the type of savings education leaders expect. When tablets do not come pre-equipped with all the desired applications and user functionality and cannot be easily integrated into an organization's existing management system, the cost of implementing and maintaining the tablet solution can become prohibitive. The Harris Interactive survey mentioned previously found that preparing tablets to work in a school's existing infrastructure can cost more

than \$1,400 on average. There can also be additional costs for bundled apps and installation services, along with a litany of potential unforeseen costs on device and network maintenance/performance.

Content and Hardware Compatibility

Seamless hardware and software compatibility can be an issue for many tablets as well. Not all software and content is compatible between different devices, which potentially could force districts to double-purchase content, tablets or both. With regard to hardware, some tablet models lack USB ports, meaning they can't work with most external hardware. This forces the owner (in this case, a school or district) to purchase specialized hardware to adapt the tablets appropriately — leading to another fleet of equipment to manage and maintain.

Tablets that integrate well with existing management systems — and come pre-equipped with all the desired applications and functionality — will help schools and districts preserve previous software and hardware investments.

Ease of Use/Management

An educational institution's tablets are deployed and maintained by IT professionals, but are chiefly used on a day-to-day basis by non-experts: students, teachers and school administrative staff. This means that a well-defined, strategic approach to tablet training and management is absolutely critical. If teachers (and by

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extension, students) do not receive the training they need in proper tablet use, the resulting headaches can place a real burden on IT staff, especially if the tablets' management solution is complicated and/or poorly integrated with existing IT systems. It is a given that users (teachers and students) will encounter difficulties with their tablets from time to time — having

Tablet Specs for Success

Tablets are becoming ubiquitous, but not all tablets are created equal. Here are some simple but oft-overlooked specifications to consider when exploring tablet solutions for your educational institution.

- **Windows 8.** As mentioned previously, Windows 8 tablets, such as the Dell Latitude 10, are easily integrated into a school's existing IT management system — unlike many other tablet operating systems, which are mobile device specific. This saves IT and the school at large a significant amount of time, money and headaches.
- **High-quality graphics.** Many students enjoy learning visually, and tablets are a great medium for this. Make sure tablets can run graphics content quickly, minimizing load times and maximizing productivity when video and illustrations are being used. For example, Dell's Latitude 10 tablets come with Intel's Graphics Media Accelerator.
- **Access to peripherals.** Ensure your tablets have the ability to hook up to additional peripherals, including a monitor, keyboard and mouse. Dell's Latitude 10 Docking Station enables a desktop-like experience when needed for more advanced computing or when in use by students with special needs.
- **Strong warranty.** Kids will be kids, which means tablets very well may be damaged sooner or later. Look for a tablet that comes with a quality hardware warranty — preferably at least a year. Dell's Latitude 10 comes with a one-year basic hardware warranty, plus an additional year of limited or onsite service, depending on the model.
- **Lightweight.** Textbooks may eventually be replaced entirely by digital content, but that day is yet to come. Students still carry a lot of books around, and it's important to ensure that a tablet doesn't add too much to their existing backpack burden. Some tablets weigh less than a pound and a half — Dell's Latitude 10 weighs between just 1.43 and 1.47 pounds, depending on the model.
- **Price.** Yes, schools have budgetary challenges. No, that does not mean tablets are out of reach. Tablets are an investment — pick the right one, and the return will be more than worth the initial cost. That said, there's no need to break the bank on a tablet that costs more than a laptop — it is possible to find a tablet that comes with all the features described here but respects your bottom line as well. Dell's Latitude 10, for example, retails for under \$500.



a well-integrated and simple management system in place is the key to overcoming this hurdle.

In the face of these challenges, many K-12 school districts — eager to get tablets into the hands of students and educators — implement ad hoc, “good enough” solutions to some of these issues. In cases of non-compatibility, where one piece of content isn't compatible between the new tablets and existing laptops and desktops, some districts resort to adopting alternate content or buying entirely new hardware or software solutions — both expensive strategies.

To get around the cost of purchasing software licenses for tablets that lack the right applications

and functionality out of the box, some districts adopt “unorthodox” purchasing protocols. In spring 2011, for example, a grant enabled 23 public schools in Chicago to give students both a tablet and a \$200 gift card to buy education-related apps — this allowed the schools to avoid having to purchase the apps and licenses themselves. In theory, the decision to put purchasing into student hands was progressive. In reality, however, there were no precautions set up to prevent students from spending the gift cards on non-education-related items.

Adopting, implementing and managing a tablet program should be easier — and it can be. This is where Windows 8 tablets can help.

The Appeal of Windows 8 Tablets

Flexibility is one of the features of tablets that has education leaders so excited. The best tablets are IT and operationally efficient, touch-intuitive and flexible from a user productivity standpoint. While maximum productivity may still require the complementary use of a laptop or desktop at certain points, students and teachers alike can still employ tablets to handle many, if not all, basic tasks tied to the curriculum (assuming they possess appropriate levels of functionality). What's more, when tablets come equipped with USB ports and support legacy applications, users can leverage them with peripherals, including printers, digital microscopes, scanners, enlarged keyboards and existing software or content that has been previously purchased.

Tablets with Windows 8, in particular, maximize this level of performance and flexibility. The Windows 8 operating system is agile, scalable and — most important for the K-12 environment — *easy to administer*. Windows 8 provides IT staff with a host of convenient device management options and streamlines the process of purchasing and distributing multiple licenses to fleets of tablets. Tablets with Windows 8 can also work seamlessly with other devices — laptops, desktops and mobile phones — that are also equipped with Windows OSs.

For IT staffers, tablet management is simplified thanks to the two management tools that come included with Windows 8 and Windows 8 Pro. The most prevalent is the System Center Configuration Manager (SCCM) 2012 SP1, which provides remote control, patch management, software distribution, operating system deployment and network access protection. This feature is also designed to allow IT managers to configure multiple tablets at once — perfect for the education environment where IT staffers may have to upload and/or tweak apps for an entire class or grade level.

Another common management tool for Windows 8 tablets is Microsoft Intune, a subscription-oriented and cloud-based management system for districts or schools that wish to manage up to 500 devices at a time. Additionally, Windows 8 tablets can be smoothly integrated into a school/district's existing PC device management tools. There is no need to purchase and maintain additional hardware or software to integrate Windows 8 tablets.

Windows 8 also includes useful remote access features not found on some other tablets OSs. Windows 8 Pro and Enterprise both offer Domain Join capabilities, meaning students and teachers can take a Windows 8 tablet home with them and still access their school's network using a VPN, allowing for fully secure remote access. Tablets running Windows 8 also come equipped with Windows To Go, a scaled-down version of the OS that allows users to boot and run Windows 8 from mass-storage devices, such as USB drives. This is important for K-12, because it allows users to access Windows from just about any PC, extending the in-class tablet experience to the desktop at home (or a desktop at the local library). Students and teachers can leverage tablet technology without having to take the tablets off campus when the final bell rings.

"We chose Dell Windows 8 devices because teachers can integrate them into their existing curriculum; students can now produce information as easily as they can consume it and the Dell Latitude 10 tablets are easy for us to manage within our existing IT infrastructure."⁶

— Bill Westrick, IT Director, Fargo Public Schools

With regards to software licensing, Windows 8 tablets allow for easy licensing through Windows Live ID, a unique identification that is tied to individual users instead of individual machines. This makes it easy for students in different grade levels to use the same devices for different purposes; access to certain apps is controlled by characteristics in a user's ID. Under this approach, when a third grader logs on to a communal tablet, he or she will see only the third-grade apps, but when a fourth grader logs on to the same device, he or she will see only those apps for fourth-graders.

The Real World: How Tablets with Windows 8 Can Help

Features of Windows 8 tablets go beyond those mentioned above, and many of these can lead to great benefits of their own — benefits that translate into



process transformations and unprecedented computing efficiencies in the K-12 (and even K-20) computing environment. Here are some real-world education scenarios that detail the enormity of change Windows 8 tablet technology can engineer.

Volume License Purchases

You're an educator and you've found a great app that supports the curriculum and ties back nicely to the Common Core State Standards with which your district strives to comply. With most other tablets, IT staffers would have to jump through hoops to make a volume license purchase — a process that includes profile injections, volume vouchers and app-specific codes. With Windows 8 tablets, the process is comparatively quick and effortless; IT departments receive a license key file for the app in question and use SCCM 2012 SP1 (or, in some cases, Intune) to “side-load” the apps out

to particular tablets or particular users based on the attributes of their Active Directory profiles.

Peripherals and Legacy Applications

You're an educator and you want to use your tablet with an in-class digital microscope. With other tablets — many of which do not come equipped with USB ports — this simply wouldn't be possible; there would be no way to connect the microscope to the tablet. But with a Windows 8 tablet, incorporating the microscope — or any peripheral device, really — is as easy as plugging it in, watching the computer automatically load requisite drivers and following the instructions to set it up.

Configuration, Patch Management

You're an IT staffer and you need to make some configuration changes to a group of tablets. With

certain makes and models of tablets, you would have to round up the lot of the devices and manually log into each one to make the desired changes. In contrast, the configuration management tools included with Windows 8 tablets make it easy to tweak settings from a central location and push the updates to all the tablets in the system. In particular, SCCM 2012 SP1 and Intune allow network administrators to push updates to tablets every time a user logs in. Administrators also have the option of blocking certain apps or services in certain circumstances (thereby preventing students from using apps such as the “Watch ESPN” app while they are logged in to the campus network).

Remote Access

A class of fifth graders is working on a project that requires them to access certain apps from home during a holiday vacation. In the past, these students would not be able to remove tablets and associated apps from the school. With Windows 8 tablets that offer Windows To Go, however, students can take their OS and apps home with them on a USB drive. Some of the students take the USB and plug it in on their PCs at home, while others bring the USB to the local library and plug it in there. In all cases, the students are able to complete the assignment on time. Likewise, their teacher can use the same functionality to complete her own work in the comfort of her home or local library, accessing school resources via a VPN connection.

Conclusion: The Right Solution

Tablets, owing to their combination of versatility, functionality and affordability, stand at the forefront of education’s mobile device revolution. Tablets have the potential to fundamentally change the face of K-12 education for the better. Many schools have already adopted tablet solutions, and many more will do so in the near future.

To justify the investment in tablet technology, however, adopters of tablet solutions for schools must be cognizant of all the capabilities and characteristics of the different models of tablets being considered for purchase. Key among concerns is the idea of integration — the ability to swiftly and simply integrate the tablets into the school’s existing IT device management system

The Dell Difference

When compared to other tablets in large-scale education deployments, the Dell Latitude 10 essentials configuration:

- requires 52 percent less time to manage;
- is 99 percent faster for software updates, saving approximately 197 hours with automated updates; and
- saves IT time, doubling the number of devices a single IT staff member can manage.⁷

with no need for external add-ons or additional plug-ins and modifications that take up the time, energy and resources of IT and the school or district at large. This is the advantage of adopting tablets equipped with Windows 8. With the right tablet solution, the possibilities for improved K-12 education are endless.

Endnotes

1. “100 million tablets by the end of 2011: What will it mean for learning?” IDEA.org, 2011, <http://www.idea.org/blog/2011/02/15/over-100-million-tablets-by-end-of-the-year-says-morgan-stanley/>
2. “Educators choose Dell Latitude 10 tablets to help personalize learning,” Dell Press Release, 2013, <http://www.dell.com/Learn/us/en/uscorp1/press-releases/2013-03-07-dell-education-latitude-tablets?c=us&l=en&s=corp>
3. Education Tablet Management Survey, Harris Interactive, 2013, <http://i.dell.com/sites/doccontent/corporate/secure/en/Documents/harris-education-survey.pdf>
4. NMC Horizon Report, www.nmc.org/pdf/2012-horizon-report-K12.pdf
5. “Piper Jaffray 23rd Semi-Annual ‘Taking Stock with Teens’ Survey Confirms Discretionary Spending Recovery,” 2012, <http://www.piperjaffray.com/2col.aspx?id=287&releaseid=1680089>
6. “Educators choose Dell Latitude 10 tablets to help personalize learning,” Dell Press Release, 2013, <http://www.dell.com/Learn/us/en/uscorp1/press-releases/2013-03-07-dell-education-latitude-tablets?c=us&l=en&s=corp>
7. Tablets in Large Enterprises: Dell Latitude 10 with Windows 8 vs. Apple iPad, A Principled Technologies Test Report, Commissioned by Dell, Jan. 2013, http://www.principledtechnologies.com/Dell/Latitude_10_enterprise.pdf

For more information about Dell Education Solutions, visit
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