

From staff reports



# Powering the Digital Classroom

*How students want to learn, and how they're actually learning, doesn't match up in many schools.  
How can education leaders balance this equation?*

Julie Evans has seen these results before.

Evans' organization, Project Tomorrow, is now in its 11th year of polling K-12 students about their experiences using technology, both at home and in school. This national survey, called "Speak Up," also asks parents, teachers, and administrators about their ed-tech attitudes and experiences, and it's the largest survey of its kind.

When Evans began reviewing the student responses to last year's survey, she noted the continuation of a long-running trend: In too many cases, there seems to be a "disconnect" between how students say they want to learn and how they're actually learning in the classroom.

For instance, 73 percent of students said they'd like to use a mobile device such as a smart phone or tablet to look up information online whenever they need it. Sixty-nine percent said they'd like to use a mobile device to record lectures or labs for review at a later date, and 61 percent said they'd like to use a mobile device to collaborate with their peers.

Yet, fewer than half of the high school students surveyed—42 percent of seniors, and just 36 percent of freshmen—said they're allowed to use their smart phones in class for academic purposes. While three out of four high school seniors said they own a laptop, only 18 percent said they could use their personal laptop in class.

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Today's students want access to information and opportunities to collaborate with their peers.

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What's more, there appears to be a similar disconnect between how students say they're learning in school and how educators think they should learn.

Only 35 percent of K-12 administrators who responded to last year's Speak Up survey said they don't allow students to use their personal mobile devices in school—but if the student responses are to be believed, that doesn't match up with the reality that most students are experiencing.

After years of conducting the survey, why does this disconnect between ed-tech ideals and realities persist—and what needs to happen to actually move the needle in schools?

"I think about this a lot," Evans said.

Her responses to *eSchool News* were underscored by experts who've had success in transforming the nature of learning in K-12 schools—and all of them

offered sound advice for what it will take to power true digital education.

### 'A jet engine on a horse-drawn buggy'

One reason that educators' views on K-12 digital learning don't seem to match students' realities is that "attitude changes about the value and use of digital tools and resources usually precede actual behavioral changes," Evans noted.

So, "while we might see that administrators are now placing a higher value on the idea of mobile devices in the classroom ..., those higher value statements are not always immediately matched by tangible changes," she said—such as allowing students to use their own digital devices for learning.

Evans called these attitudinal changes "harbingers of movement toward new policies or programs." But often, the lag time between changes in

attitude and new school policies can take longer than a year. "It is rarely immediate," she added.

The best way to move this process along, she said, is to "immerse administrators and teachers with the technology, so they can use it as a personal productivity tool." The Speak Up survey results suggest that administrators who are mobile device users themselves "not only have a higher value proposition around mobile learning, but are more likely to have implemented it within their school or district."

Even as behaviors begin to change, all too often this occurs without adequate planning.

"Many schools and districts are continuing to try and retrofit a jet engine on a horse-drawn buggy," Evans said. Instead, "we need to think about how to design or redesign 'school' so that it fits the needs of the 21st-century [learner]."

Figuring out how to pay for digital

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devices “is a good step,” she said—“but without purposeful planning, the effort is doomed.”

During a webinar hosted by the Alliance for Excellent Education as part of Connected Educator Month in October, three school administrators who have led successful ed-tech initiatives agreed on the importance of careful planning.

“Strategy and vision are so important,” said Scott Smith, chief technology officer for the Mooresville Graded School District in North Carolina.

Lenny Schad, chief technology officer for the Houston Independent School District, remarked: “When I talk to people who are considering one-to-one or BYOD [initiatives], one of the first things I [ask them] is, ‘What is your strategy?’ Don’t follow trends. Sit down and think about your holistic strategy.”

“Lots of times, people lead these initiatives without doing groundwork ahead of time,” said Patrick Larkin,

assistant superintendent for learning at the Burlington Public Schools in Massachusetts, which has given iPads to all high school students. “They talk about one-to-one as a solution, but they haven’t talked about the problem yet. ... It’s not about technology; it’s about changing the way we do instruction in our schools.”

This last point is critical. Simply overlaying technology onto traditional teaching practices “will have only a limited impact on learning,” Evans said. “And sadly, the kids know this and see it every day. That’s why so many kids tell us each year that their frustration or disappointment with the use of technology at school is not about quantity, access, or quality—it’s about the unsophisticated use of the technology at their school. The kids know how they want to use these tools and how these tools can change the learning process, but ... so many educators are either not thinking through the process or not up the task of transformation.”

## A device for every task

Whether school districts give mobile devices to their students, or let students bring their own, digital learning initiatives are “not about the device,” Schad said.

“People tend to focus solely on that device and think magic will happen once they have it,” he said. Instead, K-12 leaders should focus on “instruction supported by technology.”

Smith said one of the most common questions he receives is how Mooresville chose its devices. “The device doesn’t matter,” he said. “It goes back to what you want to do [with it].”

Evans agreed that school district leaders should begin their planning by focusing on learning objectives first. But the type of device they choose matters, too, she countered.

“Tablets are great for lots of things, and so are laptops; the trick is to identify the right tool for the job at hand,” she said. “If your primary curricular objective is to have kids do a lot of writing,

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## How do K-12 students want to learn?

Students are becoming used to reading content digitally, and very few don’t have some kind of online identity or account already, according to the latest Speak Up survey results. These findings have important implications for how students expect to learn in school.

The percentage of middle school students who said they own a personal eReader device more than doubled in the last year, from 17 percent in 2011 to 39 percent in 2012. Only 4 percent of high school students and 7 percent of middle school students said they don’t manage any online accounts—and 12 percent of students said they own at least 20 different online accounts.

What’s more, 15 percent of high school students say they’ve taken at least one self-study online class, an increase of 50 percent since 2010. An additional 15 percent of high school students and 9 percent of middle school students have participated in an online class led by a teacher.

While the numbers are still small in terms of online class participation, “the interest in online learning is creating a new supply/demand problem for many schools

and districts,” the 2013 Speak Up report said.

Four out of 10 students in grades 6-12 who have not taken an online class now say that they’d like to do so. Yet one-quarter of district administrators say that they cannot find enough teachers interested or qualified to teach online classes—and that’s holding up their expansion of online learning opportunities for students.

Students’ most frequent complaints about limits placed on their technology use at school are...

- (1) School filters and firewalls block websites I need.
- (2) I cannot access my social media sites.
- (3) I cannot use my own mobile device in class.
- (4) There are too many rules about using technology at school.
- (5) I cannot use text messaging.

“I would say that kids should be able to use their phones in middle school,” a seventh-grade girl from Ohio said. “Whenever I’m doing schoolwork at home and I get stuck on a question, I just go on my phone and look it up. We should be allowed to do that in school, too.” 





# MOBILE LEARNING:

*CREATING A PROGRAM THAT FITS BOTH **BUDGETS AND NEEDS.***

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There's a renaissance going on in education. In schools from Alaska to Alabama, educators are integrating technology into the classroom. Growing numbers of students are being given the opportunity to learn the same way they play—using mobile devices.

Whether they're using iPods to improve reading and language skills or building their own apps on 4G LTE-enabled tablets, kids in mobile learning programs are proving to be more motivated and engaged than those using traditional learning tools.

For example, math and science scores significantly increased and discipline and attendance problems decreased among students participating in Texas' Katy Independent School District's mobile learning pilot program, one of the nation's first such programs.<sup>1</sup>

So the question is no longer whether mobile learning is beneficial, but how practically and affordably to enable it at every K-12 school across the nation.

It's definitely a challenge, particularly when many districts can barely afford to maintain their current computing resources, let alone invest in new ones.

However, as many schools are discovering, it is possible. All it takes is creative thinking, smart planning—and the right partnership.

**Building upon the solid foundation of the nation's largest 4G LTE network,** Verizon can help schools determine the most practical and affordable approach to enabling mobile learning.

## Considering All the Angles

When it comes to creating a connected school, one solution definitely does not fit all. Each district and school has its own unique requirements, needs, preferences and considerations, as well as population and geography, that must be taken into account.

Particularly critical is ensuring that the digital divide is bridged—and that all students, regardless of economic factors, have equal access to devices and connectivity.

For some schools, providing mobile phones, tablets or notebooks to individual classrooms or grades may be the answer, while other districts may have the resources to distribute devices to the entire student body.

Schools can also adopt a variation of the bring-your-own-device (BYOD) programs found in the business world—one that includes subsidized devices and home connectivity for lower-income students.

Another option is to provide devices and connectivity in a dedicated space. For example, the Mobile Learning Lab, a school-bus-turned-technology-center, travels to underserved schools in Baltimore, Boston and Washington, DC.

And while devices and connectivity are important aspects of any mobile learning program, they're just part of the equation. Exploring funding options and creating a long-term plan that includes teacher training, implementation and ongoing support is also critical.

Building community support is crucial, too. Open houses, back-to-school nights and tech fairs can help ensure that all constituents fully understand not just the rules and requirements, but also the many benefits.

## Partnering for Success

So maybe it's no surprise that overworked administrators, teachers and school IT departments find creating a mobile learning program to be an overwhelming task.

Verizon can help. We're working with schools across the nation to bring smart technology solutions into the classroom. Building upon the solid foundation of the nation's largest 4G LTE network, we can help you determine the most practical and affordable approach to enabling mobile learning.

Plus, through the Verizon Foundation, we provide grants and funding and catalyze strategic alliances with other technology leaders, as well as with other schools that are embracing mobile learning.

And the support doesn't end there. We're also partnering with the International Society for Technology in Education to help train science and math teachers from underserved schools, and working to drive K-12 interest in science, technology, engineering and math via the Verizon Innovative App Challenge.

Teachers can also take advantage of the many resources available on our award-winning **Thinkfinity.org** Web site (see left).

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Through the award-winning Thinkfinity.org Web site, Verizon delivers thousands of free, Common Core Standards-aligned resources designed in partnership with the nation's leading education experts.

## Inspiring Students, Supporting Educators

Mobile technology can help schools to provide an education that's relevant, engaging and accommodating to different learning styles—regardless of demographics or geography.

And by partnering with Verizon, K-12 schools can get the resources and support that they need to plan, implement and maintain a successful mobile learning program.

Learn more about technology solutions for K-12 education at **VERIZON.COM/EDUCATION**



<sup>1</sup> "Katy Independent School District Mobile Learning Project: Energizing Teachers. Inspiring Students." [electronictextbooks.wikispaces.com/file/view/Katy%20ISD%20Case%20Study.pdf/258636176/Katy%20ISD%20Case%20Study.pdf](http://electronictextbooks.wikispaces.com/file/view/Katy%20ISD%20Case%20Study.pdf/258636176/Katy%20ISD%20Case%20Study.pdf)

4G LTE is available in more than 500 markets in the U.S. Network details & coverage maps at [vzw.com](http://vzw.com). © 2013 Verizon Wireless.

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you are better served by purchasing a low-cost netbook or laptop than a tablet. To purchase tablets and then realize you need to add on keyboards indicates, to me, that maybe you did not do the up-front thinking that you should.”

Students are “way out in front of all of us on this,” Evans added. “We asked

she said. “The kids are multi-mobilists and want to use a variety of appropriate devices for particular tasks.”

Marrying a digital learning initiative to one device is a mistake that could hinder its success, Larkin argued.

“Whatever decision you make, it’s a short-term decision,” he said. “Technology is changing so fast, and devices are changing so quickly.”

Alexandra Sneed, enterprise solu-

## Time to rethink professional development?

Digital learning adoption requires the support of the entire community, Schad said, and K-12 leaders should avoid the mistake of thinking that adoption will occur immediately across the district.

“Districts need heavy involvement from the professional development, curriculum, and technology departments—all three are critical,” he said. “Principals also have to have buy-in.” Stakeholder buy-in is necessary from the get-go, he added, noting that districts can’t eliminate parents from the planning process or bring them in at the last minute.

Another mistake to avoid is delaying professional development, Larkin said.

“Whenever people are moving to [digital learning], they should be doing the professional development whether they are one, two, or five years away from implementation,” Larkin said. “You don’t need to wait to get teachers comfortable with using technology.”

Teachers’ lack of comfort with digital tools continues to be a major challenge, Evans said, despite all the professional development that is occurring in schools nationwide.

“With every question that we ask administrators about the challenges or barriers to using ... technology tools more effectively in the classroom, the ‘teacher’ issues always come up: comfort, interest and skill,” she said. “I do not necessarily see this as a teacher problem, however—I think it points to three different challenges.”

First, district leaders need to rethink how they approach professional development, Evans said, because the current methods are not resulting in either sustained comfort or self-directed learning. “Why keep doing the same thing over and over if we want different results?” she asked.

Second, administrators must “realistically appreciate” what it takes for

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the students last year to identify for us their preferred device for a variety of academic tasks. The results pointed to a differentiation of devices that they wanted to use, based upon the inherent capabilities and roles of the devices. Create a presentation—kids want to use a laptop. Communicate or collaborate with peers—smart phone. Take notes in class—tablet. Read a book or article—digital reader.”

The idea of the ultimate one-to-one device for learning “is, in fact, a fallacy,”

tions marketing manager for Verizon Communications, agreed that flexibility is key.

“Educators and IT departments must be agile, collaborating with and among each other to ensure effective implementations for all involved,” she said. “Successful schools ... have recognized that there is not a one-size-fits-all model—and that each entity will need to work within its environment to build the best model that works for its [students and staff].”

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teachers to adopt digital learning in the classroom, she said. It's not enough just to offer training; administrators also must provide release time, encourage experimentation, support innovation, and value trial and error.

Third, "our teacher preparation programs need to rethink how they are preparing the next generation of teachers, how they are identifying student teaching classrooms, and how they are identifying the needs of their partnering school districts for more digitally ready teachers," Evans said. "We need to get to the heart of opening up new lines of communications between schools of education and school districts about the need for a different kind of teacher—and supporting the transition of the teacher from the 'sage on the stage' to this new role as learning guide or facilitator."

Sneed said change management has to be an important consideration in moving to digital learning as well. Because the move "affects not only student learning but also student reporting, classroom instruction, standardized testing, technology resources, academic performance, and even school funding ... it is not simply a change in instruction or technology," she said— "it is a total change in culture."

Change can be unsettling "for the most seasoned professionals," she noted. "Therefore, addressing the concerns of staff and helping them understand their roles in the process is paramount."

The bottom line is, "rather than asking how these tools can help us do the traditional or conventional things better, we should be asking: How can these technologies help us do better things to support student learning?" Evans said, quoting Harvard professor Chris Dede.

"I think this challenge ... is the big barrier to moving the needle on real and authentic digital conversions," she concluded. 



## Experts: Don't forget about IT infrastructure

Thoughtful planning and sustained professional development are key elements of any digital learning initiative, but experts say there are many other important aspects, too—including a robust network infrastructure.

A network upgrade is a "critical" part of a digital learning project, said Sam Farsaii, chief technology officer for Texas' Coppell Independent School District, during a Connected Educator Month webinar. Coppell operates a one-to-one iPad initiative in its high schools, and the project is moving down to the middle and elementary schools as well.

The district maintained a "bring your own device" initiative before implementing its one-to-one program, Farsaii said. "We realized that [students] might have their own smart phone or laptop as well, so the network had to be built to carry that capacity beyond the devices we're providing," he said.

"Install as many wireless access points as possible—at least one per room," recommended Josh Walters, one-to-one computing manager for Indiana's East Noble School Corp. "Purchase as much bandwidth as possible."

ENSC began its initiative with network connection speeds of 150 megabits per second. The district is currently at 355 Mbps and will move to a 500 Mbps capacity in fall 2014.

Walters, too, is trying to ensure that his district's network is prepared for at least two devices per student.

"Most kids have a cell phone in their pocket and are bringing in an iPad, tablet, or eReader," he said, "and you really want to plan on two devices per student."

Besides ample and secure internet bandwidth, schools also need to determine what level of internet access is safe for students—and what methods should be used to ensure secure mobile access, said Alexandra Sneed, enterprise solutions marketing manager for Verizon Communications.

Content should be supported by a learning management system, Sneed said, so that student learning and collaboration can be extended into after-school hours.

"Make sure that all parties within the school environment are involved in planning," she advised, "including, but not limited to, IT, finance, the superintendent, principals, department heads, teachers, and curriculum departments." Leveraging the expertise of industry partners can help as well, she added. 





# IMAGINATIONS DON'T HAVE BOUNDARIES. **NEITHER SHOULD LEARNING.**

{POWERFUL ANSWERS}



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