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TRANSFORMING EDUCATION THROUGH TECHNOLOGY

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# 9 LESSONS FROM 1-TO-1 PIONEERS

## IN THIS ISSUE

# OurSpace

**Christopher Piehler**, Editor in Chief

**With apologies to Jonathan Swift, I bless this media merger — with one condition.**

## A Modest Proposal for Comcast

### The proposed acquisition of Time Warner Cable is an opportunity to solve the biggest equity issue in education.

**EVER SINCE** cable giant Comcast announced its intention of buying fellow media monolith Time Warner Cable for $45 billion, industry watchers have pointed out how the merger has the potential to harm customers. Senator Al Franken wrote a letter to the FCC saying that Comcast "has a history of breaching its legal obligations to consumers." Some rough numbers also suggest that the merger would violate antitrust law.

On the other hand, Comcast appears to be making an effort to be a good corporate citizen. In February, in addition to renewing its vow to maintain Net neutrality, the company voluntarily extended its Internet Essentials program, which offers $9.95-a-month Internet service to families that qualify for free and reduced lunch.

That's a nice gesture, but if you ask me, it's not enough. With more and more students learning on ever-cheaper mobile devices, bandwidth is poised to be the biggest equity issue in education, and Comcast's bid for Time Warner Cable is an opportunity to resolve that issue in one fell swoop.

So if I were a member of the FCC team reviewing this merger (and let's all take a moment to be thankful that I'm not), I would resort to some good, old-fashioned blackmail. I would decree that Comcast can buy Time Warner Cable if and only if the combined company pledges to provide *free* home Internet service to every family that qualifies for free and reduced lunch — oh, and free connectivity to every public K-12 school in the country.

Is this a lot to ask? Yup. Is requiring a company to give away its services ethical? Probably not. But is it ideal to give one company control of Internet access to what some experts say would be 60 percent of American homes? Definitely not. But I believe that free bandwidth for education would be worth all the risks that this deal entails. I'd love to hear what you think.

# Here & Now

Tech + Online + Industry + Partnership

## Obama's 2015 Budget Proposes 'ConnectEDucators' Grants for K-12

**By David Nagel**

The Obama administration is proposing bringing back federal funding earmarked specifically for education technology. In its recent fiscal 2015 budget proposal, the administration included $200 million in district-level, tech-focused competitive and formula grants in a program called "ConnectEDucators."

The ConnectEDucators program, part of the administration's broader ConnectED initiative, is designed to help educators "leverage technology and data to personalize learning and improve college- and career-ready instruction, ensuring that as schools increase access to broadband Internet through the ConnectED Initiative, teachers and leaders are prepared to use these resources in a way that increases student learning and achievement," according to information released by the United States Department of Education.

ConnectEDucators will also fund leadership positions at the state level through formula grants. According to information released by ED, part of the $200 million would be used "to help enhance state and local capacity to support the transition to digital learning." Richard Culatta, who heads up ED's Office of Educational Technology, explained that would include education technology directors and deputies for individual states.

Another proposal, the "Opportunity, Growth and Security Initiative," requests an additional $300 million for teacher professional development. The initiative is targeting 100,000 teachers spanning 500 districts.

ED's FY 2015 budget, as proposed by the administration, includes a total of $68.6 billion in discretionary appropriations (a 2 percent increase over last year's appropriations), about 23 percent of which is focused on "specific areas and reforms designed to leverage major changes in educational opportunity and excellence for all students, including the expansion of access to high-quality preschool, data-driven instruction based on college- and career-ready standards, making college more affordable, and mitigating the effects of poverty on educational outcomes."

Eighty-nine percent of the discretionary spending is targeted to formula grants, the remainder on competitive grants, such as ConnectEDucators. Read the full story.

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## Kill the Quest for the Killer App

**PRESS PLAY**

In their latest podcast, recorded live from Singapore, mobilists Cathie Norris and Elliot Soloway declare that, despite some ed tech enthusiasts' best efforts, there will never be one "killer app" for K-12. Why not? Because education is not one focused task, but includes a variety of skills that require a number of different tech solutions.

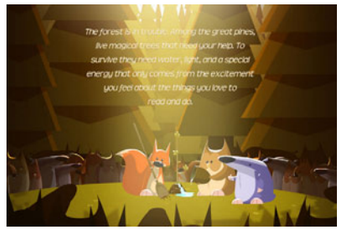
## [webinars]

### Engaging With the Local Community Through Google at St. Albans City School

In this webcast, hear directly from the Innovation Specialist at **St. Albans City School** in Vermont about how they use Google Apps for Education to transform learning and engage with the local community. From their early days as a Google Apps for Education school, St. Albans worked on creative projects using Google tools to improve their town. Attend this webcast to learn how St. Albans uses Google Apps as an integral part of their project-based learning curriculum. Sponsored by Google

*New and archived webinars are available at thejournal.com.*

# [industry update]




## Wandoo Planet Opens to Beta Testers

Evanced Solutions is looking for teachers, librarians and students to sign up as beta testers for Wandoo Planet, a new software platform designed to help children to discover their interests and find relevant books, music and other content via a recommendation engine. According to the company, the beta version of Wandoo Planet will work on any major Internet browser that can run a minimum Flash version of 11.8. To become a beta tester, click here.

## FlipCon14 Is Coming to Pittsburgh

Flipped Learning Network's seventh annual conference, FlipCon14, is scheduled for June 23 to 25 at **Mars Area High School** near Pittsburgh. The event will also be livestreamed worldwide through the FlipCon14 Virtual Conference. This year's agenda includes three plenary sessions, six featured speakers, 48 concurrent sessions and learning lounges for help desks and small focus groups. Keynote speakers will include Jon Bergmann, Aaron Sams and other co-authors of *Flipped Learning: Gateway to Student Engagement*.

Virtual attendees can view the plenary sessions and then choose among six featured speakers and 18 of the 42 concurrent sessions. Eligible sessions will be streamed live and archived for a year.

New for this year, the Boot Camp for Beginners will provide a primer on flipped classroom basics. The three-hour session will be interactive and based on the needs of attendees. An all-day pre-conference training session covering screen-capture software will be held on Monday, June 23.

Early bird and group registration rates are available.

# breaking news

**Live Feed**

- U Wisconsin-Madison Launches Web Version of School Administration Improvement Tool 03/07/14
- FCC Looks To Boost Broadband Support for Schools as It Reviews E-Rate Modernization 03/06/14
- App Ed Review Offers Teachers Tips on Using Apps in Class 03/06/14
- Infinitely Virtual Intros Cloud Hosting Plan for Education 03/06/14
- FlipCon14 is Coming to Pittsburgh 03/06/14
- Report Recommends Curtailing Virtual School Growth Until Quality Issues Can Be Addressed 03/06/14

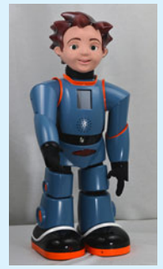
**Click Here for Breaking News**

- Dell Forms Youth Advisory Board for E… /14
- Montana To Build Statewide Data W… ct K-12, Postsecondary Student Data 0…
- OTOY 3D Rendering Software Now Fre… Students 03/05/14
- Instructure Selects K-12 Canvas Grant Winne… 03/05/14
- NEC Unveils New Video Wall Displays 03/05/14
- Kids in Need Foundation Kicks Off School Readiness Program 03/05/14
- PCs See 'Most Severe Contraction on Record' 03/05/14
- iPad No Longer the Tablet of the Majority 03/04/14
- Amplify and Intel Education Introduce a Ruggedized Tablet 03/04/14
- Knovation Moves to INetU Hybrid Cloud 03/04/14
- Illinois Turns to Open Source Framework for Statewide Portal 03/04/14
- IBM Competitions Ask Students to Master the Mainframe 03/04/14
- Obama 2015 Budget Proposes 'ConnectEDucators' Grants, New Race to the Top Programs, State Ed Tech Directors 03/04/14
- Desire2Learn Buys Achievement Standards Network 03/04/14
- Chalk.com Offers Private Professional Learning Platform for Educators 03/04/14
- Oakland Unified Rolling Out 8,000 Chromebooks 03/04/14
- Google Play for Education Offers Thousands of K-12 Books 03/04/14

More news

# {win big!}

## Name That Robot



Social robotics maker RoboKind has launched the Robots4Autism Name Our Robot Contest, which invites educators to suggest and vote on a name for the company's social robot. The robot is the central component in Robots4Autism, an autism intervention program that uses purpose-built social robots and developmental instruction to teach critical emotional and social skills. According to the company, the robot uses CompuCompassion software to read an individual's emotions and level of attentiveness, adjusting interactions accordingly to enable human-like social engagement.

"We originally named our robot Zeno," said Fred Margolin, RoboKind's CEO and founder. "But for some kids with speech and language difficulties, the 'z' sound can be a challenge to pronounce."

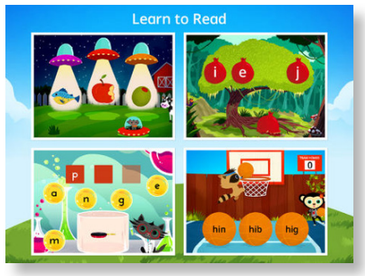
Voting on a new name, which ends April 14, is open to anyone 18 and older, or to those under 18 with parental supervision.

# Product Roundup

## 6 Early Reading Apps

**Common Sense Media's service Graphite, which offers independent ratings and reviews of learning apps and websites, has compiled and reviewed this list of its top apps for introducing young students to reading.**

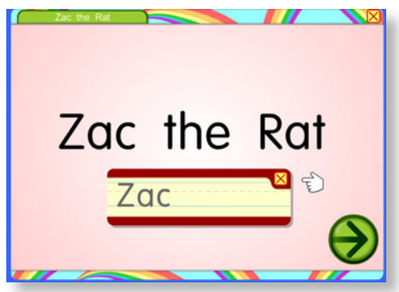
In **Beck and Bo**, kids drag and drop objects onto the screen in the right place to create scenes that teach them logic, cause and effect, and use of words. For pre-K; $1.99. *Read the full review.*




**Learn With Homer** engages ages 3 to 6 by having them read, listen, draw and record. Phonic exercises teach letter sounds, word recognition and comprehension. Grades pre-K to 1; free. *Read the full review.*


In **Monkey Word School Adventure**, a cute monkey takes kids through a jungle of phonics and word groups to help them learn early reading skills. Grades pre-K to 1; $1.99. *Read the full review.*


In **Montessori Crosswords,** kids match letters to sounds and arrange the alphabet on a board to spell words. Visual and auditory inputs work for different learning styles. Grades pre-K to 3; $2.99. *Read the full review.*




**Starfall Learn to Read** offers beginning phonics instruction in the form of songs and videos, complete-the-word activities, concentration matching games, and more. Grades 2 to 3; $2.99. *Read the full review.*


**LanguageBuilderDeluxe** tasks kids with making sentences based on picture prompts. Answers can be written or recorded, which helps teachers monitor progress. Grades K-3; $9.99. *Read the full review.*

## newsreleases

### AV & Presentation

- NEC Unveils New Video Wall Displays
- Crestron Ships Connect It Presentation Interface
- New Digital Signage Gear Takes Center Stage at Expo
- wePresent Ships 64-User Wireless Classroom Presentation Systems

### Enterprise Systems

- Yammer Enterprise Coming to Microsoft Office 365 Education Plans

### Infrastructure & Facilities

- Infinitely Virtual Intros Cloud Hosting Plan for Education
- Dell Rolls Out Gigabit APs for 802.11ac Networks

**Click here for new releases**

### Mobile Computing

- Samsung Reveals 8-Core Chromebook 2
- HP Introduces 64-bit Atom Tablets
- New Ruckus SPoT Brings Location-Aware Services Indoors
- Cloudpath Networks Intros Automated Device Enablement Framework

### Security

- Impulse Point Integrates SafeConnect with iboss Secure Web Gateway for BYOD Security

### Teaching & Learning

- Chalk.com Offers Private Professional Learning Platform for Educators
- Google Play for Education Offers Thousands of K-12 Books
- Dragon Dictate for Mac 4.0 Supports Pre-Recorded Audio File Transcription
- Drupal-Based Opigno LMS Released in Hosted Version

On March 31 at 4 PM ET, learn more about Kiker's innovative use of technology in an edWeb.net webinar hosted by *THE Journal*'s Christopher Piehler.

# INNOVATOR

**RICH KIKER**, DIRECTOR OF ONLINE LEARNING
PALISADES, PA, SCHOOL DISTRICT

## >> THE RIGHT BLEND

I was a teacher in this district, then I left and was spending most of my time consulting. I was asked to come back to help build a K-12 online school that would be flexible and blended enough to meet diverse needs. We felt strongly that blended learning is not only a new and modern instructional model, but it's proven. With an online component, you can use the classroom for project-based learning, enhance and remediate, enrich during the online time, and you don't have gaps in learning.

## >> A RELAXED ENVIRONMENT

At the secondary level, we now offer close to 20 fully online courses. In these, there is plenty of opportunity for blended learning. The teachers all get a period of their day during which kids can come in and meet with them. We've built cyber centers — areas set up to be warm and inviting, staffed by full-time support teachers — where students who are taking online courses can operate in a more relaxed space than the four walls of the classroom.

## >> EXPANDED CHOICE

Part of our plan was to think about how we customize the learning process for students. Can students overload their schedule to graduate early? And how do we bring in MOOCs — these emerging open courses — and provide elective credits to our students? This is our current focus, trying to drive choice and increase student autonomy. So we're implementing three-year graduation outcomes, and with MOOCs students can get rich experiences in electives that we'll never be able to offer — subjects like oceanography, advanced programming or electrical engineering.

## >> HOW TO SUCCEED WITH TEACHERS

When you're setting up an online program, you have to involve the teachers in the process early. It would be easy for them to misinterpret what we were doing as, "The district is trying to take our jobs." They need to be stakeholders and decision-makers in the process. Assisting them with content and professional development is also critical. You can't just say, "We're going to move your class online. Good luck." We went with a company called Blended Schools, which provides Common Core-aligned courses that teachers can adapt and make their own. In addition to our internal time for professional development, as part of the package Blended Schools provides support to teachers: on-site training, regular online webinars and other online professional development opportunities.

## MY TOP 3

**Kiker shares three keys to running a successful e-learning program.**

## >> VALUE ADDED

All of this isn't about changing education; it's about improving it. We should never leave behind the face-to-face instructional strategies that have been wonderful for the last 50 years. If you have a great diorama project in your classroom, don't stop doing that. But now we can add to these pieces. First we provide the access and bandwidth for on-site devices, then we give students autonomy in how they become proficient with the material — navigating and building supports for the classroom, but letting the inquiry and discovery happen. When you put those things together, you create the space for students to build amazing things and find what's awesome. the

Bridget McCrea

# Can Software Predict Teacher Success?

Busy districts are turning to technological solutions to help them vet and select applicants for teaching positions.

Inundated with job applications and short on time and human resources, school districts across the country are turning to technology to help them sort through possible candidates and determine their potential effectiveness in the classroom. Here's how three districts are using software to predict and track teachers' impact on student learning.

With 160 schools to staff and 145,000 students to serve, **Charlotte-Mecklenburg Schools** (NC) gets a high volume of applications for teaching positions every year. To help streamline the hiring process, the district's principals have long relied on technology to filter and prioritize candidates before any interviews or follow-up calls take place. Up until October 2012, the district used an applicant-assessment tool that did a fair job of vetting candidates — but didn't include any parameters related to student outcomes. Feedback from users was lukewarm, said Talla Rittenhouse, executive director of sourcing and onboarding for the district. Eventually the system was mothballed, and Charlotte-Mecklenburg shopped around for a solution that was based on student outcomes. In June 2013, it found what it was looking for in the TeacherMatch platform, which uses Educators Professional Inventory (EPI) assessments to identify top candidates and predict those candidates' impact on student achievement.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TeacherMatch allows principals to review a list of candidates, prioritize those individuals and then set up interviews based on that prioritization. "They aren't making hiring decisions on the system," said Rittenhouse, "but they are deciding which candidates to interview." TeacherMatch stores a score for each applicant, so if the district is having a tough time finding a middle school science teacher, for example, Rittenhouse can look at recent "finalists" who would be good matches for the positions. "If a candidate has a good TeacherMatch score — but wasn't ultimately hired — I can go back and give him or her a second look," said

Rittenhouse, “and consider that person for a school that he or she didn’t previously apply to.”

## One Piece of the Hiring Puzzle

Another tool designed to help districts hire teachers who will have a positive impact on student learning is Hanover Research’s Paragon K12 solution, which ranks applicants according to the statistical likelihood of their positively impacting student outcomes. The platform also provides information on each candidate that a hiring manager can use to assess cultural fit and to set up in-person interviews. This month, **Fairfield Public Schools** (CT) will roll out the solution in its 17 schools.

According to Ann Leffert, director of human resources, the 10,000-student district has been using Hanover Research’s products for several years, and was previously using a system that conducted side-by-side comparisons of potential job candidates based on how those candidates “feel” about the teaching profession. “We’ve been using that system for quite a while as part of our application process for certified staff members,” said Leffert. “When Hanover Research approached us about its teacher effectiveness tool, we thought it sounded very exciting and useful for what we were trying to accomplish.”

Once in place, Fairfield’s teacher assessment tool will allow prospects to apply online through the district’s website. As part of that process, applicants will take an online survey that will be used to rate potential hires in several different areas. The survey responses, said Leffert, will help the district determine each candidate’s potential effectiveness in the classroom. “Ultimately,” she said, “we’re hoping it will improve our ability to judge a prospective teacher.”

Leffert is quick to point out that the district doesn’t plan to begin making hiring decisions based solely on the

numbers or rating generated by its new automated system. “Even with all of the technology that’s at our avail, we still rely heavily on face-to-face interviewing and candidates’ sample lesson plans before we make the final determination,” she said. “We view the technology piece as a viable management tool and just one piece of a bigger puzzle.”

## Gaining an Edge

Two years into using TeacherMatch as an applicant-assessment tool, **Distinctive Schools** of Chicago has found new ways to make the most of its technology investment. Take professional development, for example. According to Joseph Wise, chief education officer, PD for the organization’s five schools (which serve 3,000 students) has gotten easier thanks to TeacherMatch’s personalization capabilities.

“It gives us a better shot at creating the most appropriate professional development opportunities and coaching for our teachers,” he explained. If, for example, a teacher ranks extremely high on the “classroom management” scale, said Wise, why would you put extra time into that person’s professional development when the teacher in the next classroom needs more enrichment in that area?

Distinctive Schools also uses the assessment tool to clue teachers into their own strengths and weaknesses. Once hired, candidates are given their TeacherMatch assessments to review, giving them insights into their own capabilities and allowing the district to hone future professional development opportunities around those results.

Wise said Distinctive Schools is also using TeacherMatch for its original purpose, and is seeing good results. New candidates spend about an hour applying online and taking the related survey, and Wise’s team receives the color-coded results of those activities. Like a stoplight, the scale ranges from green to yellow to red. Using this scale, Wise said, “We can quickly select all of the green candidates and get an edge on hiring over another competitive school district. That expedites our ability to staff up with the best potential candidates in the pool.” the

**Bridget McCrea** is a business and technology writer in Clearwater, FL.





NEXT:
9 lessons from 1-to-1 pioneers

**Providing a device for every student doesn't require a huge staff or an impossible amount of funding — and you don't have to figure out everything before you've begun. But it does call for vision, planning and commitment, as these experts will attest.**

**BY DIAN SCHAFFHAUSER**

# 9 LESSONS FROM 1-TO-1 PIONEERS

**EVEN AS THE Los Angeles Unified School District** is being derided — rightly or wrongly — for bungled management, inadequate teacher training, overpaying for devices and insufficient attention to infrastructure, its massive iPad program has helped make the concept of 1-to-1 part of the national conversation beyond ed tech circles. Here, tech leaders from five districts share nine lessons they've learned over a collective 37 years of 1-to-1 computing.

Logan Cyrus

## 1) Set realistic goals and share them.

One lesson of 1-to-1 that just about everybody agrees on: It can never be about the technology. Barry Bachenheimer, director of curriculum, instruction and assessment at **Pascack Valley Regional High School District** (NJ), said, "Just because the kids are typing away on a keyboard or the teachers are projecting a website doesn't mean what they're doing is effective or learning is taking place. If you set your goals as things like student engagement, levels of inquiry, levels of understanding — which research has shown lead back to student achievement — and technology plays a building block in that process, you'll set yourself up for a good program."

Of course, those goals need to be realistic and achievable to gain buy-in. When Pascack first started its program 10 years ago, one aspect that district leaders agreed upon and stated repeatedly was that the board of education wouldn't tie standardized test scores back to the laptop program. "That was a big relief for a lot of people involved," said Bachenheimer. "They didn't want to say, 'Oh, because we've given you these laptops, suddenly, your scores are going to shoot through the roof.' As a result, teachers could really focus on innovation in the classroom." Incidentally, he added, the scores have gone up, on both state achievement and SAT and AP tests. "However, I don't know if we can draw direct correlation between the laptops and the increased scores. I think it has to do a lot with the fact that we're just teaching better. Students are better prepared, and the district as a whole just embraces the idea of achievement."

As you're setting goals, make sure to communicate to your stakeholders consistently and continuously. The **Metropolitan School District of Wayne Township** (IN) school community has seen a lot of building

construction in the last 15 years. For that reason, when Chief Technology Officer Pete Just sought a metaphor for communicating about the district's 1-to-1 program (which launched in 2012), he chose a blueprint. The contents of his "Blueprint for Digital Learning" come out of several years of thinking and planning by a "technology vision committee" that made broad recommendations about where the district should be going. One aspect of that, said Just, was "to focus on how we more tightly bind curriculum with the use of technology, which is becoming ubiquitous, and how we make the ubiquity of the technology something that really emphasizes teaching and learning."

The one-page blueprint Just put together gets modified once or twice a year but consistently relays the overall set of goals, the components that will be required for success and the schedule for rolling out the stages of digital learning. He uses the document to communicate the goals of the program: information literacy, digital citizenship, engagement, equitable access to information and so on.

Just said that "It takes people hearing it multiple times, knowing that you're serious about it, and communicating in a clear and fresh way," to keep momentum going.

## LESSONS LEARNED

**VIDEO: Pascack's Paul Zeller and Barry Bachenheimer share the key elements of how they have made their 1-to-1 implementation work.**

## 2) Parental involvement will evolve.

When the idea of giving computers to every student is new in the district, plan to spend a lot of time with parents. Early on in their programs, both Pascack and **Henrico County Public Schools** (VA) held informational meetings with all parents every year to explain how the program worked and what the benefits were for the students. Now, the districts have both backed off from that and taken different approaches to involving families.

Henrico now has meetings with parents of eighth-grade students who will be coming into the high school system the following fall. Even these meetings are targeted only to parents who haven't had training with the district before. Parents can also choose to take the training online instead of face-to-face. Debra Roethke, interim director of instructional technology, explained, "It gives us an opportunity to talk with the parents about Internet safety, about how this computer that the student has is different from what they might have right off the shelf."

Pascack has eliminated the parent meetings altogether. Parents would "rather get information via the website," According to Paul Zeller, director of technology, "Obviously, if parents have questions, they're always welcome to call us, but at this point, this is just part of the fabric — like textbooks in a classroom."

## 3) Every rollout must include PD.

In Wayne Township, before teachers could lay a hand on their new Chromebooks, they went through training on learning management system My Big Campus as well as Google Apps for Education, both of which were being introduced with the 1-to-1 program. "We didn't want to emphasize the device," Just noted. Teachers learned how to access the online applications from

multiple devices, then they were introduced to Chrome — and finally the Chromebooks were handed out. "After about two weeks," Just said, "they said, 'That's it? A hardware browser? Okay. We get it.' "

Just pointed out that devices weren't issued to students until "many months" later, giving teachers the time to think through classroom management questions and begin tapping into the content that's available,

## LAPTOP? TABLET? PHONE?

**VIDEO: Jason Mooneyham, executive director of U.S. public sector sales for Lenovo, reveals how his company helps 1-to-1 districts pick devices.**

such as My Big Campus "bundles" that include open educational resources developed by educators that can be used, revised and distributed by other educators.

**East Allen County Schools** (IN) took a different approach. In May 2012, the district celebrated "iPadaPaLooZa," in which it handed out iPads to more than 600 educators, who were then trained on iPad basics and given an overview of the first year of the blended learning initiative. As a follow-up, however, teachers at East Allen have a collaboration day every Wednesday in every building at the end of the day.

As Keith Madsen, interim director of technology, said, students are dismissed 30 minutes early, and teachers get 45 dedicated minutes to learn about whatever the principal of their school wants to cover. About half the time, IT brings in a technology coach to train teachers on technology in the classroom, including specific iPad apps. That same coach will also meet with individual teachers or small groups before or after school and during prep time.

Younger teachers may be more comfortable with technology, but they still need guidance. "They've been on the device since they were children," Henrico's Roethke noted, "but they've also been taught by teachers who sit up in front of the classroom and lecture to them. Giving them a computer is one issue. Giving them the computer to teach children and picking the right tool and when it's appropriate to use it or not use it takes a little bit of learning."

## 4) Fine-tune your PD.

Like everything else with 1-to-1, you can expect professional development for teachers to ebb and flow as the program matures. For example, PD at Henrico in its earliest days included a "whole lot of whole group training because there was so much to cover," said Roethke. Now it has morphed into more one-on-one or small group content-based training. "When we sit down with teachers, it's a combination of finding out what they're teaching and what they're comfortable with, and helping them take baby steps to move forward. It needs to be based in their content, so they have a purpose and reason for what it is they're trying to do — not just throwing the technology at them and saying, 'Here, try this.' "

Also, from the very beginning, Henrico assigned a technical support technician (TST) and an instructional technology resource teacher (ITRT) to every school. The TSTs do the hardware training and troubleshooting; the ITRTs do the software training. "Having those people in every secondary school is part of what makes our program so effective," Roethke stressed.

In its earliest days Henrico would pull new teachers into summer training and show them everything they

needed to do, "which was ridiculous," laughed Roethke. Now the training for educators new to the district still begins in the summer, but the district has also added additional training throughout the year. "When they need to know how to do report cards, then we show them how to do report grades. Instead of showing them in August we show them in November," she explained.

Because East Allen doesn't have the kind of support staff Henrico does, Madsen has come up with an innovative way to provide ongoing PD. He has uploaded recorded training to iTunes U, Apple's free resource for educator-generated audio and video instruction. Currently, the EACS iTeacher site provides 116 recordings covering everything from "Acceptable Alternate iPad Covers" to videos on "WebDav and WebDavNav Setup and Use."

Madsen said, "iTeacher is all the training you need as a teacher on your technology with the iPad." But, he added, "Inside iTunes U is where our professional development blossoms. It's all at your fingertips. You don't have to be at school in front of a technology coach to get this. You can be sitting at home in your comfy chair at 8:00 at night learning about the Showbie app."

Most of the recordings are less than 10 minutes long and cover how to use the five paid apps and 25 to 30 free apps (including Pages, Numbers, Keynote and iMovie) that reside on teachers' iPads. The training features the voice of Madsen or his technology coach, and the instruction focuses on the app from the teacher's perspective and then the student's perspective so that the teachers can see what the students will experience.

Madsen has also recorded tech support for students on iStudent (66 items) and for parents on i-Parent (39 items). Both are podcast channels that anybody can subscribe to.

## 5) Going paperless has its challenges.

A major benefit of a 1-to-1 program is eliminating the need for print textbooks. East Allen teachers have been able to mix up what they use in classes. They've developed their own curriculum, and now every grade has about eight "bundles" of content for each major subject, each covering about 4 1/2 weeks of instruction. Math and English Language Arts are tied directly to Common Core standards. Guidance about that content is available in PDF form online, with links to apps and other online resources that can be used, as well as core vocabulary, learning targets, evidence of learning and other teacher notes.

The district has also purchased three iBooks for the iPad from Pearson, including Algebra 1, Algebra 2 and Geometry, which students are supposed to download on their own using a unique Apple ID. While East Allen has "tentative plans" to continue with the use of iBooks, it's running into a couple of problems, said Madsen. First, the size of the downloads makes for a "real burden" on the network at the beginning of the year. Second, students are sharing their IDs, which means kids can't always get to the textbooks when it's time to load them onto their specific devices. So now, rather than getting just any iPad from the district inventory at the beginning of the school year, students will be issued the same one they had the previous year, except in cases where they're transitioning into new grades that have upgraded versions.

The transition from paper to digital content hasn't been hassle free. As more and more teachers are relying on cloud-based services in the classroom, they've been disappointed on occasion, which can be a setback for 1-to-1 progress. For example, for a short period My Big Campus had experienced dramatic adoption and couldn't keep up with school demand; teachers experienced unexpected shutdowns and the loss of assignments.

According to Madsen, "It wasn't an East Allen problem; it was a My Big Campus problem. They've fixed it for the most part, but when the teachers get burned by this technology, they revert back to their old ways of doing things."

His advice: Don't overpromise on technology. Allow it to be a "grassroots movement." He said, "If you get one or two key teachers in a building using it and they're vocal about how much time it saves, how much it really helps student engagement, [that helps in] overcoming the fears that some teachers have with technology they're not used to."

## 6) Infrastructure is never complete.

Forget about ever being done with building your network infrastructure, said Thuan Nguyen, chief information officer for **Kent School District** (WA). "The infrastructure is something you're constantly building and expanding." At the same time, you don't have to design and build it from day one for 100 percent utilization of resources like storage or servers. "The reality is that, the first day and the first year that you have your 1-to-1 program, kids and staff aren't going to be fully using a lot of those resources." Better to monitor usage and have a model that's flexible enough to be added onto. That means watching CPU utilization so you can add on additional virtual servers and monitoring storage, so you can add more as demand rises. But, Nguyen said, "That's an expense you don't necessarily need to incur from the beginning."

Just as the back-office infrastructure needs to be monitored to sustain the growth of 1-to-1, so does IT need to keep an eye on what will be the optimal client operating systems for its devices. Currently, Kent runs Windows 7 on every device. But it took IT 18 months of planning to get to the point where it could spend one summer doing all of the imaging for every computer. That advance planning allowed the district to be ready for the upgrade at the same time it was cycling out computers that weren't capable of running the new OS.

## 7) Prepare for device abuse.

Testing various devices taught Wayne Township that the Lenovo ThinkPad X131e Chromebook had the features it needed: a keyboard, instant-on and a full-day battery life. But only lengthy pilot experience taught the district that this particular model would also hold up best under middle-school student use.

Early on, said Just, "The first thing we saw is kids were forgetting they had a pencil or headphone on their keyboard and closing the lid." The result: cracked screens. Second, even though the district provided a sturdy case, sometimes the kids didn't put them in the case or they wouldn't zip up the case all the way. "As they're jogging down the stairs, here comes the device — right out and down the stairs it goes." Because the Lenovo model is built with "a much more rugged, sturdier case" and has a "rubber bumper" around the edge, added Just, "that has saved a lot of problems from happening or being worse."

Most districts appear to follow a four-year refresh cycle. At Pascack, though, the refresh rate is a scant two years. That keeps the "traditional expenses" related to repairs — replacement of batteries and keyboards — down. That said, with 2,000 computers among students and 300 for faculty and staff, the district keeps about 100 to 150 devices on hand as replacements or loaners for when accidents happen or problems surface. Early on in the program, the repair rate was much higher than it is now. But, Zeller said, students have learned to treat their computers as if they were their own.

It helps, he added, that "administrators also make sure [students] understand the value of the machine." And it's not just the principals. "We're all on the same page. We know exactly what we're going to do if the student is playing Frisbee with the laptop out in the courtyard or if a kid spills a bottle of water on it. It's a policy. That's crucial, because oftentimes technology people get thrown into the middle of it. I flip it around and say, 'If the kid breaks a window, do you get the custodian involved or does the principal get involved?' If the kid breaks a computer, it goes to the building principal just like a broken window."

| School | Length of 1-to-1 program | Grades | Type of computer | Student case | Current student computer count | Refresh cycle | Funding source |
|---|---|---|---|---|---|---|---|
| East Allen County Schools, IN | In year 2 | 4 to 6<br>7 to 8<br>9 to 12 | 16 GB iPad 2<br>16 GB iPad 3<br>32 GB iPad 3 | Maroo | 7,500+[1] | 3-4 years | Technology department budget |
| Henrico County Public Schools, VA | In year 14 | 6 to 12 | Dell laptop | None | 27,500 | 4 years | School general fund |
| Kent School District, WA | In year 8 | 7 to 11<br>12 (fall 2014) | HP EliteBooks | Always-On | 10,000-12,000 | 4 years | Tech levy |
| Metropolitan School District of Wayne Township, IN | In year 2 | 6 to 8<br>10 to 12 | Lenovo ThinkPad X131e Chromebook<br>Lenovo x131 with Windows 7 | Higher Ground Shuttle 2 | 5,000<br>400[2] | 4 years | Capital project fund, grants and parent supplement fee |
| Pascack Valley Regional High School District, NJ | In year 10 | 9 to 12 | MacBook Air | Brenthaven Trek Sleeve and Speck Shell | 2,000 | 2 years | Operating budget line item for lease payments |

*1 Includes count of 16 GB iPad 2s used in K-3, which are issued at a ratio of 1 iPad per 4 to 5 students; also, iPads for grades 4 to 6 remain in the classroom when school isn't in session.*
*2 Students specifically in Ben Davis University High School, a dual credit school*

At Kent, before students get their laptops, they have to earn their "driver's license," which proves they've passed a test that covers how to navigate, how to stay safe online, how to turn wireless on and off, how to connect the computer to the network and how to charge it.

Despite their best efforts, East Allen was seeing so many cracked glass screens on its iPads that the district sought out a small business in a nearby town that now replaces them for $100 (charged as a "deductible" to parents). On top of that, the district offers parents an optional annual $30 insurance plan (which also comes with a $100 deductible) to cover the eventuality that the entire device is damaged and needs replacing.

## 8) Streamline your management process.

Kent implemented its first 1-to-1 program during a period when the district was undergoing major reductions in the technical staff. So while demand for software installations and support was growing ever higher, the staff count was dropping by almost 60 percent. That forced Nguyen and his IT organization to get "really good at managing the devices remotely and making sure they were rock-solid enough to get through an entire school day."

A few programs he has adopted to stay on top of the work include the following:

- Microsoft App-V to virtualize "as many of the applications as possible." When a user wants software that hasn't been installed yet or a teacher wants software for the entire class, they call the call center and it's attached to the student account. Students log off and then log on and it's there waiting for them;
- Microsoft System Center Configuration Manager to manage and image the computers;
- Absolute Software's Computrace for inventory and theft management; and
- DyKnow for classroom management, "so students are paying attention to the teacher."

Every summer, the district replaces about a quarter of its computers and reimages the new ones along with the other computers to be issued in the coming school year. About 40 days before the end of the school year, IT takes inventory to identify "missing keys, broken keyboards, things that students may not put in a work order for" so that its outside HP service provider can order parts for refurbishing the computers.

That company comes on site to clean all the machines as well as the custom-designed Always-On cases that the students are expected to keep their devices in.

On deployment day, an IT team and a group of volunteers at the given school take over the library or the gym. Class by class, the students arrive and go around the "circuit," picking up each component of their 1-to-1 bundle. The last stage is to turn on the computer and log in before they leave. "If there are any issues, we can troubleshoot and resolve them," explained Nguyen. Students then return to their class and start a scavenger hunt developed with the teacher in that class that ties into the day's lesson and also requires students to perform other computer-related activities, such as turning off wireless, finding certain features and locating software.

## 9) Once you've gone 1-to-1, you can't go back.

During a recent lease refresh for the 15,000 computers being used by high schoolers at Henrico, the team working on the initiative looked hard at the question of whether the district would save money if it stopped the 1-to-1 program. Director of Technology Peter Taylor said, "Everybody looks at the program and they get fixated on the sticker price of the computer." However, he went on, "What we were able to show is that the computer is not really an additional device; it's become very much integrated into the DNA of what we do. We've been doing it for so long that it's impacted so many decisions. We don't spend money on textbooks. It was several million dollars a year; now it's down to almost nothing. If we got rid of the laptops, a lot of the money we were spending on [those] would have to be spent replacing the textbooks."

That kind of thinking goes on down the line. Because every student has a computer, every classroom effectively becomes a computer lab. In turn, dedicated computer labs have been turned into regular classrooms. If the 1-to-1 program were gone, those labs would have to be restructured for assessments and specialty software usage. "We would lose so much school capacity, we might be forced to build a new school," Taylor pointed out. "It's not an isolated decision. It has impact across everything that we do."

Wayne Township's Just added, "Don't feel like you have to do everything at once." Only by going a "little slower, a little more deliberately" will you get teachers on board and trained. His final piece of advice was, "Take your time, do it well, do it with fidelity, do it with excellence." the

**Dian Schaffhauser** is a senior contributing editor based in Nevada City, CA.



NEXT:
Projects that inspire global collaboration

Stephen Noonoo

# These Global Collaboration Projects Go Way Beyond Skype

Here's how one program is engaging Web 2.0 skills to bridge cultures and classrooms — one project at a time.

The world is flat, author and *New York Times* columnist Thomas Friedman once declared in a bestselling book about the rise of global communications. If Julie Lindsay had anything to say about it, the classroom would also be flat.

Lindsay, an online teacher and former IT director for international schools from Queensland, Australia, is the co-founder — and now sole proprietor — of the K-12-focused global outreach organization Flat Connections (formerly known as the Flat Classroom). She helped launch the group in 2006, with the goal of harnessing the power of online learning to increase cultural understanding and global collaboration among today's students.

The concept of "flattening" the classroom walls is loosely based on the philosophy espoused in Friedman's book *The World Is Flat*, which posits that the development of global collaboration, new technologies and social advancements are knocking down the boundaries that once kept cultures isolated and self-contained, thereby forcing everyone to come to grips with the changing, interconnected world around them. But where Friedman's work is largely theoretical, Lindsay aimed to build something more concrete (indeed, project-based) for the students and educators who will inherit the flat world.

Lindsay explained that the aim of the flat classroom is to "bring the outside world in and you put your classroom out there. It's about the teacher taking charge of the learning, and the student taking charge of the learning — and being able to use technology to bring those rich opportunities into the classroom."

Flat Connections is not a curriculum per se, but a series of independent collaborative projects. Each project focuses on different skills and grade levels by connecting classrooms from around the world using a variety of social and collaborative platforms. The partner classrooms then co-produce projects such as videos or co-authored wiki pages.

A sliding subscription fee offers schools and districts access to projects based on the number of students registering. "It's based on connected learning, but you have to go beyond that," Lindsay said. "You have to develop authentic networks and authentic connections and real-world experts and other classrooms to connect with."

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# COLLABORATION

One project, called Digiteen, is designed for students in grades 8 to 12. Teams consisting of students in two or more classrooms around the world introduce themselves via Edmodo and Skype and then, together, explore different aspects of digital citizenship, eventually cocreating a Wikispaces page on a given theme. Individual schools then work on an action project that students can share with their peers at school, across the street or around the world. Other Flat Connections projects focus on bringing students together for debates or to foster cultural awareness among young learners through the creation and use of multimedia.

"The goal is that schools offer a global collaborative opportunity at every grade level," Lindsay said, adding that teachers often interpret that advice to mean they have be doing global collaboration projects all the time. "No, you don't," she clarified. "It's hard work. You cannot do it all the time, but it's important that every student at every grade level needs at least one experience."

Teachers, too, can benefit from global outreach tailored to their needs. Lindsay said, "A lot of teachers who start stepping into global collaboration, they're not always successful because they're not always sure what to do. They don't always set it up correctly, and then they feel disappointed when people don't join them or when the project doesn't meet the needs that they want it to meet."

To help teachers get started, Lindsay's organization offers a professional development course for educators that focuses on providing extra support and skills for teachers or administrators who are managing Flat Connections projects at their schools. Conducted entirely online over the course of 10 weeks, the course focuses on building communication and Web 2.0 skills, as well as taking a deeper dive into digital citizenship and collaboration considerations. At the end of the

course, teachers become Flat Connections Global Educators. (Those with less time can opt for the one-week crash course.)

## The Flat Classroom in Action

Theresa Allen, a computer teacher at **Cathedral of St. Raymond**, a K-8 school outside Chicago, was no stranger to global collaboration when she first got involved with Flat Connections in 2009. Her students had already connected with peers in China through the iCollaboratory out of Northwestern University, but she was hesitant to share her and her students' blog posts with a broader audience.

The Flat Connections PD course, she said, helped overcome her concerns. "I was really nervous about blogging at first, and so when I started blogging with my students I would monitor everything and I would look over their comments and posts before they even went out," she said. "That's good to a point, but now I can look over them later, and I fix them if needed. But for the most part they're good, and I'm a lot more relaxed."

Allen now leads her students in Flat Connections projects in third and seventh grade. In between these, her classes engage in other collaborations such as the Global Monster Project out of Western Illinois University. Allen serves as a general liaison between Flat Connections and the school, and she has worked to infuse the projects into other areas of the curriculum by giving other teachers control over the course of a project, which might take up to three months to complete. "I'm the springboard for them," she explained. "I get them started and guide them. It starts in my room and then it branches out into their classrooms."

Digiteen, for example, aligns well with Common Core State Standards and language arts, she said. "I know the language arts teacher says it fits so well into his curriculum along with others, so he'll do that two days a week, and then the other two or three days a week he'll do something else."

The overall result is that students build on collaboration skills and enjoy challenging themselves, she said. By the time they get to seventh grade, "they want to do something else besides presentation. They want to actually make their own videos: downloading them, cutting them and making a presentation, so it's really neat to see."

At **Faith Lutheran**, a secondary school in South Australia, students enjoyed learning new Web 2.0 and collaboration tools, but the global link was the real hook. Connecting with schools in Vermont, Singapore and other parts of Australia was exciting for students and fostered some of the best discussions because the experience was so radically different for them.

Teacher Avylon Magarey explained, "A lot of the kids don't leave the area often, so they don't interact with kids from other countries." Since Magarey's students were part of an early Flat Connections pilot, they were not going to be traditionally assessed. To ensure that work was completed on time, Magarey made a point of explaining that students "in other countries are relying on you to do your bit," an approach that she said resonated with students. In the future, however, Magarey may use the Flat Connections rubric for assessing students, which takes student reflection and other factors into account to measure how much students col-

laborated throughout the project and how effective their research was.

## Peer-to-Peer Mentoring

Teachers have also found that global collaboration makes students more effective communicators and more eager to share their experiences with others. One year, Allen asked her class if any students who had recently completed a project would be interested in mentoring students (both at Cathedral of St. Raymond and elsewhere) who were going through the projects for the first time.

She remembered, "I thought, 'Oh, nobody's going to want to do this because they're going to have to give up their lunch period; they have to eat lunch and then be mentors during that time, because I didn't have any extra time."

To her surprise, 15 students volunteered. "So they mentored, they looked at other students' Edmodo posts and they gave them suggestions and they were there for questions. We Skyped so that if anyone had any questions they could answer as well. I thought that was a really good follow-up extension."

As part of their action project for Digiteen, Magarey's students created a short movie about what type of content was appropriate to post on Facebook and what wasn't. Later, they presented their findings, along with their completed movie, to incoming eighth-graders. In addition to the collaboration and Web 2.0 skills covered, Magarey said, "That kind of peer mentoring was another great part of the project."

## How to Start Flattening

While Lindsay encouraged interested educators to take a Flat Connections PD course either before or concurrently with their first project, she said they're not necessary for successful outcomes. "Actually, it does work jumping right in to our projects, because we support the teachers," she said. "We have project managers, we have weekly meetings with the teachers, we set up a whole communication network for the teachers for the project and hold their hand all the way through. And to an extent, joining one of our projects is professional development, because you're joining this network of teachers who are very keen to make global collaboration work in the classroom."

According to Allen, interested schools really just need "a couple gung ho teachers that are really willing to try it. You need to get those teachers to get started on it, and then I think it just expands."

In her experience, teachers will then often run with the projects, turning them into something that meets their needs and the needs of their students. "I'm always pleading and I'm always recommending this to my other teachers," Allen said. "I think it encompasses so much, including Common Core, but you're also showing [students] how to present themselves online. This is the future, so you're helping them — not only now, but when they're adults or in college — relate to someone even from a different country, with different customs. That's important." the

**Stephen Noonoo** is a contributing editor based in Los Angeles.

## MAKING A CONNECTION

**VIDEO: Flat Connections' Julie Lindsay shares some of her favorite Web 2.0 tools that facilitate global collaboration.**



NEXT: Keeping student data private

# KEEPING STUDENT DATA PRIVATE

**Five CTOs discuss their data privacy concerns and reveal how they are working with teachers, students and the community to safeguard student information.**

**WE LIVE IN AN ERA** of Big Data and small devices. The combination of mobile computing and always-connected, cloud-based software creates enormous freedom for students and teachers — and potentially enormous headaches for the technology officers tasked with managing it all. In conjunction with the release of the Student Privacy in Connected Learning initiative, CoSN and *THE Journal* co-hosted an EDRoom roundtable in which district-level tech leaders shared their concerns and offered some solutions to colleagues looking to make sure that private data stays private.

**When it comes to privacy of student data, what issues do K-12 educators need to be concerned with?**

**Steve Young:** Privacy and confidentiality of data is a paramount issue, in and outside of K-12 education. Malicious and nonmalicious use of personal data can range from disturbing to outright criminal. We have seen Facebook use personal users' photos in advertising, and we have seen massive data breaches like the theft of identity information of over 110 million Target customers.

As districts, we are required to protect student data under the federal FERPA guidelines. But guidelines or not, we owe our students the right to privacy of their confidential information. What scares me as an IT administrator is that major multinational companies with large IT staffs and IT security specialists are experiencing breaches daily. Very few of us in K-12 education are lucky enough to even have a dedicated IT security staffer. That seems to make the challenge we face almost insurmountable. But this does not mean we should ignore our duties to our students. We need to be diligent in securing systems, educating our staff and students and selecting technologies and systems that are secure.

Selecting technologies raises what I see to be a larger issue. Every district staff member to some extent is now an IT staffer. Anyone can sign up for free, cloud-based Web software and potentially be sharing private student data in a matter of minutes, entirely bypassing an IT department or any approval process. A teacher might unknowingly sign up his students on a Web platform that does not comply with COPPA, with the best of intentions of trying something new out with his students. Or an office worker may mistakenly place a spreadsheet of FERPA-protected data into an online file-sharing service like Google Drive, Dropbox or Box and mistakenly share this data with persons not approved to access it. All of this only takes a few clicks and can be done by virtually anyone in any school.

One of the main ways to combat this is through education of staff. Districts need to leverage online training, newsletters and other opportunities to educate staff about the importance of protecting students and their data.

## THE PANELISTS

**CURT CEARLEY** serves as the director of technology services for **Fayette County Schools** in Georgia, a district of approximately 20,000 students in 24 schools.

**LENNY SCHAD** is currently CTIO for the nation's seventh-largest school district, **Houston ISD**. His first book, *Bring Your Own Learning: Transform Instruction with any Device*, is scheduled to be published this month.

**MELISSA TEBBENKAMP** is in her eighth year as the director of instructional technology for **Raytown Quality Schools**. She is a founding member and past chair of the Missouri state chapter of the Consortium for School Networking (CoSN).

**JEAN TOWER** is currently the director of technology for the **Public Schools of Northborough and Southborough**, MA, a regional district of ten schools serving the two towns. She serves as a board member of MassCUE and is currently the president of the board of METAA (Massachusetts Educational Technology Administrators Association), the local CoSN chapter. Tower is CoSN's current chair.

**STEVE YOUNG** is the chief technology officer at **Judson ISD** in San Antonio, where he has served in that capacity since 2006. In 2011-2012 Young was selected as the chair of the Texas K-12 CTO Council, the first state chapter of CoSN. He is also the founder of the San Antonio Area Technology Directors group.

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**Jean Tower:** Security of student data is more important than simply having a student database system that is secure. There are many ways information can leak out. Educators need guidelines that help them operationalize the sometimes vague ideas of privacy that many teachers have.

For example, COPPA is a driver behind many Web 2.0 sites' terms of service requirement that users must be 13 or older to create an account. Yet many educators think it is okay to have elementary school students sign up for Evernote or Instagram, or some other app that has great educational potential.

K-12 education needs to be concerned about data privacy and security at many levels, from the district level and enterprise software all the way down to the classroom level and apps that teachers are making uninformed decisions about using.

We need helpful tools that can guide district leaders through the process, helping them to pay attention to data issues and suggesting actual language to include in service contracts.

**Curt Cearley:** We in the technology department and many others at the district level know about FERPA, HIPAA, COPPA, CIPA and the rest of the alphabet soup that guides our decisions at the enterprise level and drives our discussions with vendors, suppliers and others to ensure the greatest level of protection possible.

Easy guidelines, repeated warnings, training and education, and constant vigilance are necessary to protect students and their data at the enterprise level, the classroom level and the student/parent level. We provide our schools this table of some of the most frequently used applications with a review of their terms of service, age limits and parental permission requirements. We review it quarterly (about all we really have time for, which isn't a great solution) and update or add information for teachers and staff.

Being mindful guardians of the data entrusted to us (teachers, administrators, staff) is an imperative. Selecting enterprise solutions that help us be protective of that data is an essential first step. Digital citizenship and an awareness of the "footprint" we (teachers, students, staff, parents) create is an imperative. Teaching and training all who work with students, parents, faculty and staff is an essential first step in that imperative.

**Melissa Tebbenkamp:** We continue to struggle with educating staff on — or at least getting staff to follow through with — adhering to policy when it comes to protecting student information and refraining from unapproved online resources.

We have guidelines and policy in place that explicitly state that all student information should be kept private and secure, including encrypting information that may be on a mobile device or online storage. However, we still have incidents each year where a laptop is stolen or USB drive lost that has FERPA-protected information that is not encrypted. Student information is stored on online file-sharing. I have found that the best approach in our district has been a "hit the pavement" approach where administrators personally connect with teachers and educate them on the "why we shouldn't/can't" and let the word spread from there.

Another major concern we have been facing are sites that explicitly state that by signing students up for accounts, the teacher/district is taking on the responsibility of compliance with COPPA. Educating our teachers about privacy policies and terms of service is imperative. The documents are long and nobody wants to take the time to read all the legal jargon. However, it is important to understand the terms for each resource used. It is also difficult to keep a current, comprehensive list of approved/unapproved resources. Therefore, we must trust our teachers to make wise decisions about their chosen resources and provide them with the education and resources to help them make the best decision.

**Lenny Schad:** I will add a couple things: 1) We need consistency in the legal opinions regarding COPPA and FERPA as they relate to the K-12 space. The application of each act is different with each attorney, and therefore different within each district. Adherence to these acts is critical and should not be invented by each individual school system. If we could get a consistent opinion for each act, application and adherence would be a lot easier. 2) One of the areas I am most concerned with regarding data security is second-party data mining. There is not a school system in the country that does not have sensitive data in the cloud. How can we ensure that our data being stored in the cloud is not being mined by second parties, and if it is, what data is being mined and where is it going?

## COSN'S PRIVACY PLAN

**VIDEO: CoSN's CEO Keith Krueger talks about Student Privacy in Connected Learning, an initiative that includes a toolkit for educators.**

**What practices are your district staff following and what technologies are they using to protect the privacy of student data?**

**Young:** We obviously employ many standard security technologies, such as firewalls, Web filtering, virus scanning at several points, e-mail filtering and restrictive access to install software. All of these help against malicious attacks, but less so with inadvertent sharing of private data. That will best be prevented through user vigilance and education.

**Tower:** Steve, you raise a growing issue, especially challenging when educators jump in to sites without awareness of or adherence to regulations and district policies. But even with sites that have been approved, there is always a possibility of data being stolen or leaked. I also believe that we have to treat all student data as seriously as if it were credit card information. I have heard teachers opine that nothing they are giving these sites is "worth" stealing or hacking.

In my district we use Google Apps. This makes collaboration and sharing quite easy for students and teachers alike. But we find we have to be very diligent about educating teachers about information that is okay to put in a Google doc and what is not. That's one very small example of the kind of issues we are dealing with every day.

**Cearley:** As we adopt more and more applications for portable technologies (phones, tablets, readers, etc), we know less and less about those application developers, their intentions and their security. This makes not only students, but the adults in the district vulnerable. I'm not naive enough to believe that everyone is going to carefully look through the EULA or the Terms of Service and ask the tough questions of the application developer for something that was found to help resolve a particular curricular issue or assist students in grasping a concept.

At the district, we do the best we can to help solve those issues before they come up. We are working hard toward appropriate rather than acceptable use agreements. We provide a wide variety of digital citizenship resources to help keep that at the forefront of what we do online. We stress data privacy with teachers and

administrators monthly. We ensure the hardware and software are in place to protect the network, data and users. Here is the scope and sequence for K-8. Here are some additional resources we use for digital citizenship for parents and students.

**Tebbenkamp:** One way we help extend the education of our teachers is by including privacy and security in our digital citizenship and technology curriculum starting in elementary schools. We begin at second grade teaching students to not give their personal information online, even when signing up for a website. We also teach students about privacy policies and COPPA.

We do have policies in place that state that only district sponsored/hosted/approved sites and social media can be used with students. We have a process in place to have websites and software approved. However, there are always a few teachers who do not follow policy. We constantly speak individually with our teacher leaders to guide best practices and promote the district resources provided.

No matter how much you educate and secure your information, there is always a risk of a security breach. Several years ago we had a breach of information. This eye-opening event stressed that your greatest risk is the human element. After that event, our district began a practice of having cybercrime and data breach insurance.

**Schad:** Incorporating digital citizenship into your PD and curriculum is the only way to begin the behavior change required in the area of data privacy. However, the focus cannot be just on teachers and students. Your digital citizenship program must extend to the community, particularly parents. There are great resources available to school systems free of charge, so once again don't feel like you have to reinvent the wheel.

**Tower:** Common Sense Media is a great resource for digital citizenship materials.

**In your district, do you allow student use of consumer cloud computing applications, contracted cloud computing applications or both?**

**Young:** At Judson ISD we are using contracted cloud services. We have certainly not perfected the adoption of these. And many educational software cloud providers seem mystified when you start questioning them about their policies and how they store and share data. I think that will start to change with schools' awareness of the issues, thanks to resources and toolkits from organizations such as CoSN. Recently we have used this list of cloud questions to start our discussions with providers. It is not comprehensive, and I think I will be combining this with some of CoSN's resources for an even more comprehensive list.

**Schad:** In HISD we use both consumer and contracted cloud applications. As issues continue to arise with consumer cloud applications related to data privacy, our policies will need constant review. Regarding contracted cloud computing, we are developing verbiage that will be included in any evaluations and will be a key element in the approval process. To develop the verbiage, we are using the same resource mentioned in Steve's response as well as reaching out to other school systems and agencies.

**Tebbenkamp:** Raytown does not allow student use of consumer cloud computing. We are currently using Google Apps for Education for second grade, one middle school and one high school. We will launch Google Apps districtwide for the 2014-2015 school year.

We understand that there will always be some form of data mining (such as tracking activity) that will take place when using cloud services. However, we look to ensure that students' protected information stays protected. We provide minimal student information to such services, using a random student number for the student login. We look to ensure that student information will not be sold or shared with third parties, and that the contracted provider complies with COPPA.

It is hard to negotiate with "free" contracted services. However, when we use paid contracted services, we require that the company abide by our privacy procedures and maintain compliance with data security procedures, including notifying us when one of their employees who has access to our data has been separated from the company. (They must also ensure that they have reset passwords and terminated that person's access to our data.) This is just a beginning, but even this level of negotiation has been difficult.

**Cearley:** We contract cloud services in several areas. We are a Google Apps for Education district, and our five high schools all participate in the Microsoft IT Academy (which includes extensive Office 365 use). We do transition our high school seniors' e-mail accounts to Gmail during the 100 days after graduation. That is the only allowed consumer application for students. We do allow faculty and staff to access their private consumer accounts, but constantly encourage faculty and staff to not mix personal and professional applications.

The GAfE policies were pretty straightforward when we ponied up the first five-year agreement, and so far we've been very pleased with how they do things for us with both faculty/staff/employee accounts and student accounts.

Additionally, we've found that you really can't beat the collaborative pieces that go with it. We've also been happy with what the MSITA does, although we find them a bit harder to work with and a bit more demanding of our time for the care and feeding of 365. Google

understood our concerns, worked with us extensively, made some modifications and provided some assurances that MSITA hasn't been willing to do.

**Tower:** We certainly use some contracted cloud computing applications. We are a GAfE district and we use content management systems and learning management systems that allow student and parent logins.

We look for agreements that specify that we absolutely own the data, that the provider does not have any rights to it, and that they have robust security and privacy assurances.

We also use some consumer cloud applications — Animoto, Voki, YouTube — and these are even more challenging to monitor. We ask all teachers to observe terms of use and to get their principal's permission for using these.

**Does your district have any policies or procedures in place specifically about cloud-based services that involve sharing private student data among schools and/or districts?**

**Young:** We do not specifically have rules for this (which does not mean we do not look at this when considering services).

**Schad:** We are in the process of developing these.

**Tebbenkamp:** Our district has a policy in place regarding all social media and collaborative sites (user-generated media). Our policy restricts use to district approved media sites. At this time, we do not have any approved services that share student data (outside of what the state requires for reporting purposes). All Raytown technology polices can be found here.

**Tower:** We do not yet have a formal policy on this, but are looking for exemplary policies to help us in crafting our own.

**Does your district have any policies or procedures in place to address student data privacy when using mobile devices to connect to the cloud?**

**Young:** We do not have any rules specific to devices.

**Tebbenkamp:** We have an internal procedure that instructs staff to ensure confidentiality of student information on any mobile device, including laptops, cell phones and tablets. This includes ensuring that the device is password protected, as well as encrypting any document that is in transit (such as on a USB drive). Our procedures prohibit protected student data on personal devices.

**Schad:** HISD does have policies in place as it relates to mobile devices used on school premises. However, the policies need to be modified to include not only acceptable use of the device, but acceptable use of the device accessing cloud based solutions. That work is underway.

**Cearley:** I often feel I'm playing whack-a-mole in this area. It seems as we attempt to codify through policy and procedure, something new pops up that doesn't quite fit into the niche. We have policies that broadly cover student and staff data privacy and security, but nothing specific to mobile devices. We've tried to cover the vulnerabilities by being very broad, and are constantly running up against those who don't understand the risks. We've tried to make it as simple as possible by asking folks to consider a series of questions, such as, "If you were sitting at Starbucks using this device, would you access your bank account?" or "If you were sitting in the airport using a public network, would you do this with your personal information?" We've also done a ton of work to help folks (both staff and students) understand the differences between security on the wired network and our wireless network.

**Tower:** So true, Curt. It is such a moving target. And, sadly, in answer to your questions, I think many of my teachers and administrators would think nothing of accessing their private financial accounts from a public access point! We need to do lots more education on this.

**What professional development/training have you conducted around student data privacy and the use of technology-based data systems?**

**Cearley:** And here is where things get really complex. Although I'm the director of tech services, the director of school improvement and professional learning has dominion over the content provided in professional learning. Much of what we ask in terms of privacy, data protection and data systems is omitted, or relegated to the last portion of any PLU. It may or may not get covered. I do have control over PL content we provide counselors, registrars, and administrators, so we hit that group pretty hard. In some schools it filters down to the teachers, and in others it doesn't.

For each of those over whom we hold sway, we ensure they are schooled in the alphabet soup, give them a healthy dose of responsible use and EULAs, ensure they understand that communication and collaboration with parents will serve them better than simply relying on a response to a handbook or code of conduct, and stress how important it is for students to learn early how to protect themselves online. We keep resources in front of them through e-mailing, online communities of practice and websites. I welcome any suggestions on what else to do or how to improve what we're doing.

**Tebbenkamp:** Each year we have distributed — through building leadership and/or digital resources — a basic overview of technology policies and procedures. This year, we produced a 10-minute-long sketch animation of technology policies and procedures and required all staff to verify that they viewed the video and read the policies.

Every summer, the district holds a voluntary curriculum summit for teachers. The summit includes focused technology sessions during this summit that allow for enrichment on district technology resources. In addition, new teachers receive a 90-minute technology orientation that reviews common systems and district policy regarding technology use and student data protection.

Next year, all certificated staff will be enrolled in an online course for instructional technology. This nine-part course will be an at-your-own-pace PD that teachers will be required to complete. This course will cover computer basics, technology integration, district-specific applications, student safety/district policies and procedures, and federal regulations.

The assessment questions for the legal section are designed to "teach" each component. This section will cover CIPA, COPPA, FERPA and HIPAA, as well as district policy and best practices when it comes to securing student data.

**Schad:** For our 1-to-1 high school campuses (PowerUP campuses) we have worked jointly with curriculum, PD, school leadership and instructional tech to create an integrated PD program. We are taking what was done with the PowerUp model and developing summer training for all campuses.

**Tower:** My perspective is that this has to become a shared initiative involving the curriculum and instruction department, administrators and all teacher leaders. It has to be woven into all of our professional learning. When we teach about Web posting and content, curriculum mapping, teaching in a 21st century classroom, looking at student work, analyzing data...in all of these instances (and more) there must be time devoted to student data privacy and security.

We are not there yet. the

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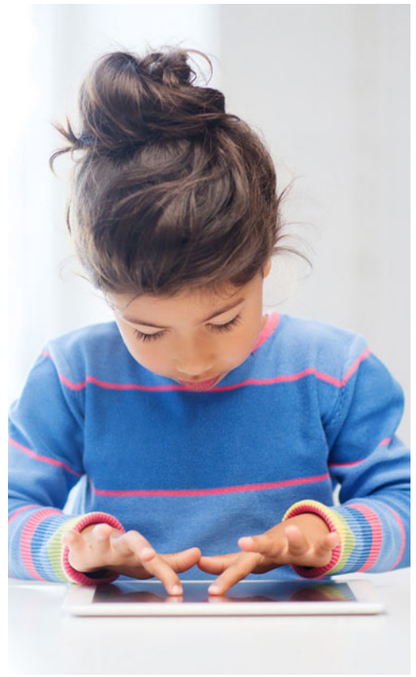

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**REACHING THE STAFF**

Staff may be reached via e-mail, telephone, fax, or mail. A list of editors and their complete contact information is also available online at *thejournal.com*.

**E-mail:** To e-mail any member of the staff, please use the following form: *FirstinitialLastname@1105media.com.*

**Corporate Office**

(weekdays 8:30 a.m.–5:30 p.m. PST)
Telephone (818) 814-5200;
fax (818) 936-0496
9201 Oakdale Ave., Suite 101
Chatsworth, CA 91311


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**SALES CONTACT INFORMATION**

**CHIEF REVENUE OFFICER**
Wendy LaDuke
P (949) 265-1596
C (714) 743-4011
wladuke@1105media.com

**WEST COAST SALES DIRECTOR**
Mark D. Buchholz
C (714) 504-4015
mbuchholz@1105media.com

**EASTERN REGION SALES MANAGER**
M.F. Harmon
P (207) 883-2477
C (207) 650-6981
mfharmon@1105media.com

**SENIOR SALES ACCOUNT EXECUTIVE**
Jean Dellarobba
P (949) 265-1568
jdellarobba@1105media.com

**SALES DIRECTOR, PUBLIC SECTOR EVENTS**
Patrick Gallagher
C (617) 512-6656
pgallagher@1105media.com

**MEDIA KITS**

Direct your media kit requests to Emily Jacobs, (703) 876-5052 (phone), ejacobs@1105media.com

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For questions on subscriptions or circulation, contact Annette Levee, (512) 301-2632 (phone); (512) 301-3361 (fax); alevee@1105media.com