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the JOURNAL

TRANSFORMING EDUCATION THROUGH TECHNOLOGY

January 2014 • Volume 41, No. 1

10 TECH SKILLS THAT EVERY EDUCATOR SHOULD HAVE

IN THIS ISSUE

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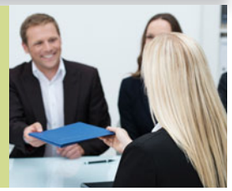
Despite some backlash, the new standards have staunch supporters in corporate America.



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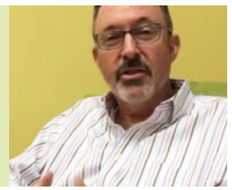

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CALLING ALL TECH-SAVVY DISTRICTS!
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Acer recommends Windows 8.

Explore More

Sleeping Beauty. Beautiful and serene in appearance, Mount Fuji is actually considered an active volcano, last erupting in the early 1700s.

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Christopher Piehler, Editor in Chief

Knowing what button to push is less important than being open to learning.

The More Things Change ...

Ed tech tools may evolve, but the aim stays the same.

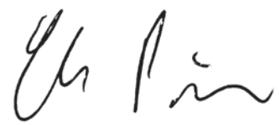
IN 2005, THE always-connected world in which we live didn't exist. There were no iPhones, no iPads, no Google Docs. Twitter was still only for the birds. Edmodo wouldn't launch for another three years. As it happens, 2005 was also the year when the print version of *THE Journal* published an article called "20 Technology Skills Every Educator Should Have," which has been one of the most-visited articles on our website ever since.

To start off 2014, we decided to do an update of that article — except this time, rather than featuring one expert's prescriptions, we crowdsourced the list to come up with "10 Tech Skills That Every Educator Should Have." (Does the fact that we cut the number of skills in half suggest that even educators have shorter attention spans than they did a decade ago? Discuss among yourselves.)

You can discover what the respondents to our online survey determined to be the top 10 tech skills for 2014 on page 13. And because nothing beats a good compare-and-contrast, we included the 2005 list on page 17.

Looking at both lists, here's the big takeaway: Although some of the skills from nine years ago may seem outdated ("knowledge of PDAs," anyone?), the older list as a whole actually holds up remarkably well. Just as it's less important for students to learn one particular fact than it is for them to "learn how to learn," knowing what button to push on any given device will always be less important than being open to whatever new methods and technologies will improve learning outcomes. It's no mistake that No. 3 on this year's list was "Being willing to learn new technology."

I hope you enjoy the first issue of the new year, and I'd love to hear from you via e-mail or the social media outlet of your choice. But today as in 2005, nothing beats a face-to-face meeting, so if you happen to be at FETC at the end of the month, please come by booth 1413 and say hello.



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Here & Now

Tech + Online + Industry + Partnership

[news]

6 States to Share $280 Million in Latest Race to the Top Awards

By Joshua Bolkan

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The United States Department of Education has chosen six states to receive Race to the Top-Early Learning Challenge (RTT-ELC) grants in the third round of funding for the initiative.

The states, Georgia, Kentucky, Michigan, New Jersey, Pennsylvania and Vermont, join 14 others as RTT-ELC grant recipients and will share in $280 million in funding disbursed over four years. The money will be distributed among the winners according to their proposed plans and the number of children younger than 6 from low-income families. The awards range from $36.9 million to Vermont to $51.7 million to Georgia, Michigan and Pennsylvania.

In Michigan, plans for the money include building "an early learning data system that provides anonymous and aggregated information on children across departments and programs and allows us to assess programs' value to parents and children," among other uses, according to an overview of the state's grant proposal.

All states in this round will be implementing kindergarten entry assessments and "tiered quality rating and improvement systems to promote school readiness" as those were "absolute" priorities for grant proposals in this round.

"By investing in high-quality early learning through programs like Race to the Top-Early Learning Challenge, we are able to close achievement gaps, provide life-transforming opportunities for children, and strengthen and build a thriving middle class," said U.S. Secretary of Education Arne Duncan in a prepared statement. "Thanks to the leadership of governors, state officials and education advocates, these states have created plans to develop high-quality early learning systems that improve the quality of learning to provide our youngest citizens with the strong foundation they need for success in school and beyond. This investment is a down payment to support and implement high-quality early learning programs across the country. There is still a lot more work for us to do." *Read the full story.*

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Using Technology More Effectively

PRESS PLAY

In their first podcast of the new year, mobilists Cathie Norris and Elliot Soloway discuss the ongoing issues with the **LAUSD** iPad initative, how too many apps are focused on outdated teaching methods and the difficulty of students trying to type their assignments on tablets. They conclude that, if districts want school boards to continue funding technology, they must show a better educational return on the investment.

[webinars]

Going 1-to-1 With Google in Education at Hillsborough Township Public Schools

In this webcast, you will hear directly from educators at **Hillsborough Township Public Schools** in New Jersey about how they have gone 1-to-1 with Google in Education solutions across their district. The district is committed to providing a superior education for all its students, to build their passion for learning and prepare them for their future careers. Sponsored by Google.

New and archived webinars are available at thejournal.com.

Here & Now

[industry update]

Amazing Grants Support Digital Learning

Lightspeed Systems

The Lightspeed Systems Foundation has announced its 2013 Amazing Grant recipients, which reward K-12 schools for outstanding digital learning projects. Among the six grant winners were the following:

William B. Bimat Elementary School in Bakersfield, CA, will do a cross-grade level, cross-country and cross-curricular study of economy and the local agriculture industry. Students will use mobile devices and other digital tools to work collaboratively on research projects, participate in webcasts with local industry leaders and create their own classroom commerce system.

Coast Unified School District in Cambria, CA, will use the funds to support its Minecraft in Education Digital Learning Project. After a successful experience training teachers and students last summer, the district will continue to host Minecraft in Education events throughout the county. The project will be disseminated and shared through My Big Campus. Grant applications for 2014 will be available this spring.

ASCD Expands Emerging Leader Program

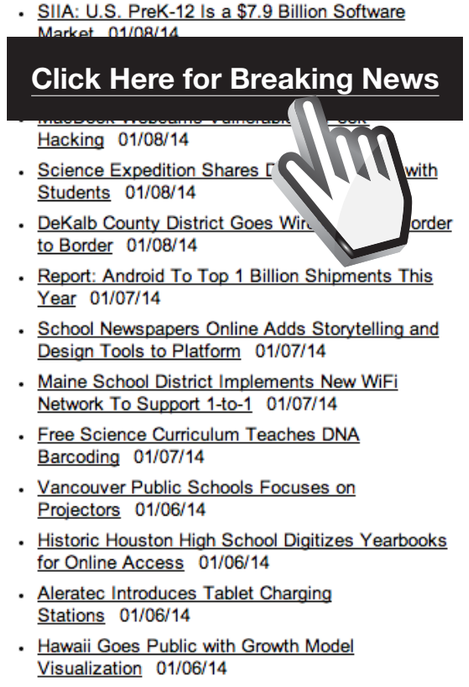
ASCD LEARN. TEACH. LEAD.

ASCD has expanded ASCD Emerging Leaders, its two-year program designed to prepare younger, diverse educators for potential ASCD leadership. The program now enrolls more educators and includes an Emerging Leaders Grant opportunity that will award up to $2,000 to participants in their second year of the program. Typically, emerging leaders have been in the profession for five to 15 years, have an interest in making a contribution to education policy and practice, and have invested in professional growth aimed at improving student outcomes. Application for the 2014 Emerging Leaders class will open on Feb. 1.

breaking news

Live Feed

- Los Angeles Library Debuts Online High School Program 01/13/14
- Virginia District Breach Caused by Risk Management Provider 01/13/14
- Dream Flight Adventures Building Simulators in Pittsburgh Schools 01/13/14
- Xirrus Issues Common Core Wi-Fit Bundle 01/13/14
- Video Surveillance Company Issuing Security Grants to Schools 01/09/14
- New Jersey Districts Implement New System to Track Student Performance 01/09/14
- Maryland District Adopts New Tip Text Conversation Service 01/09/14
- Florida School Gets More for Less with Refurbished Tech 01/09/14
- SIIA: U.S. PreK-12 Is a $7.9 Billion Software Market 01/08/14



- Hacking 01/08/14
- Science Expedition Shares [illegible] with Students 01/08/14
- DeKalb County District Goes Wir[illegible]order to Border 01/08/14
- Report: Android To Top 1 Billion Shipments This Year 01/07/14
- School Newspapers Online Adds Storytelling and Design Tools to Platform 01/07/14
- Maine School District Implements New WiFi Network To Support 1-to-1 01/07/14
- Free Science Curriculum Teaches DNA Barcoding 01/07/14
- Vancouver Public Schools Focuses on Projectors 01/06/14
- Historic Houston High School Digitizes Yearbooks for Online Access 01/06/14
- Aleratec Introduces Tablet Charging Stations 01/06/14
- Hawaii Goes Public with Growth Model Visualization 01/06/14

{win big!}

Video Lesson Contest

StudySync, a Web-based reading and writing platform, has launched the MySyncTV contest. To enter, students must create short, scripted video lessons that model academic study groups and collaborative interaction. Teachers can support students through the script-writing and production process. Prizes include a $100 Amazon gift card. Contest eligibility and entry guidelines are here. The submission deadline is April 15 at 5 p.m. PST.

Tweet for Prizes

Edgenuity has kicked off its "Tweet of the Month" Award to showcase students' success stories with online and blended learning. To participate, students must be enrolled in an Edgenuity course and should follow Edgenuity's new student-focused Twitter handle, @EdgenuityStu. Any student who tweets at the handle about online learning is eligible to win a monthly prize.

Published monthly, K-12 Mobile Classroom offers a compendium of all the news, information and insight K-12 educators need to stay current on the best ways to serve their students and their communities.
EDITOR: CHRISTOPHER PIEHLER

7 Steps to Planning for Common Core and Mobile Device Rollouts

Two experts share advice on how to get the best from your mix of Common Core work and integration of mobile devices into instruction and learning.

BY DIAN SCHAFFHAUSER

Trying to implement a mobile device initiative while your district's teachers and staff are preparing for the Common Core online assessments can be like to trying to balance on two wild horses with a single set of reins. Fortunately, planning a mobile strategy in the context of the Common Core looks a lot like preparing for any major ed tech initiative.

During the recent Fall CUE conference, two California district leaders shared advice and resources they have gained from their ongoing mobile device transitions. Marie Criste is a teacher and site tech coordinator for a high school in the 10,000-student **Roseville Joint Union High School District**, and Mike Fury is the chief technology officer at neighboring **Rocklin Unified School District**, which has 11,000 students. Previously, Fury and Criste worked together at the Roseville district, where they rolled out an iPod and iPad program and, more recently, a Google Chromebook program. Here are Fury and Criste's top seven tips for schools getting ready for Common Core and mobile device rollouts.

1) Engage your community.

From the beginning, you have to get everybody to weigh in on the plan. That includes not just teachers, administration, IT and staff, but also students, parents and the larger community. The goal is to manage expectations, address misinformation and be transparent.

"What you don't want to do," Fury said, "is get a bunch of people in a back room without gathering information from stakeholders and then have a plan doesn't reflect what all the stakeholders considered important." He added that, "As [the plan] intertwines with Common Core, it's imperative to get community involvement, ideally, upfront."

Parents, said Criste, can be your "biggest advocates." For that reason, successful districts emphasize educating parents through surveys and handbooks. Parents who participate in parent-teacher associations or who indicate their willingness via survey can function as sounding boards for planning. Read the full story.

THE Journal E-Newsletters

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THE News Update
What you need to know now about K-12 ed tech

THE 21st Century School
A/V, interactive and collaborative technologies for K-12

K-12 Mobile Classroom
Mobile technology in the K-12 classroom

Common Core Tech Update
Tips and tools to help simplify your CCSS rollout

IT Trends
Trends in networking, databases, hardware and more

FETC Learning Network
Making the FETC connection all year long

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Innovation Radiates from FETC!

Soak it up—and take it back to your school.

NEW THIS YEAR!

Playful Learning: Bringing Game Based Learning to your Classroom!

FETC is proud to partner with Learning Games Network to offer a free day of professional development to educators to explore the use of games in education.

In this hands-on BYOD workshop, educators will learn the basics of the tools, opportunities and strategies to effectively integrate games into quality teaching.

This event is free to all registered FETC attendees and participants will earn 6 hours CEU credits for attendance!

CLICK HERE for more information.

playful learning

GREAT PROGRAMMING

Get the most for your school—and student achievement—out of emerging technologies. Learn how at FETC!

- **WORKSHOPS**
- **CONCURRENT SESSIONS**

Thursday morning keynote speaker Lucien Vattel is known for his energy and innovation and inventive approach to education—check out some of his work here!

EXHIBIT HALL HIGHLIGHTS

Technology & Learning Connections Hands-On Lab

Explore the latest in assistive and instructional technology in the Technology & Learning Connections (TLC) Hands-On Technology Lab.

Exhibit Hall Grand Opening and Reception

Join your fellow attendees and presenters at the Grand Opening of the Exhibit Hall and celebrate the start of your professional development experience.

Poster Sessions

Engage in in-depth, informal discussions with the poster presenters as they discuss successful technology integration projects of interest, relevance and value to the FETC community.

PLUS: Special events, receptions, prizes and more—including a $25,000 Classroom Makeover Giveaway, courtesy of Lenovo!

OPENING KEYNOTE SPEAKER JUST ANNOUNCED!

Wednesday, January 30

Globetrotting the World of Architecture and Engineering and The Science Behind It All

Danny Forster, *Chief Architecture and Engineering Expert for Discovery Education*

Danny Forster, Chief Architecture and Engineering Expert for Discovery Education, will share his experience traveling the world in search of incredible feats of architecture and engineering and discuss the science behind the structural design of buildings from around the globe. He also will discuss the importance of STEM education to develop the curiosity, critical thinking, and reasoning skills necessary to meet the technology challenges that lie ahead in the world.

There's still time to register and attend! click here!

Sponsored by Discovery EDUCATION

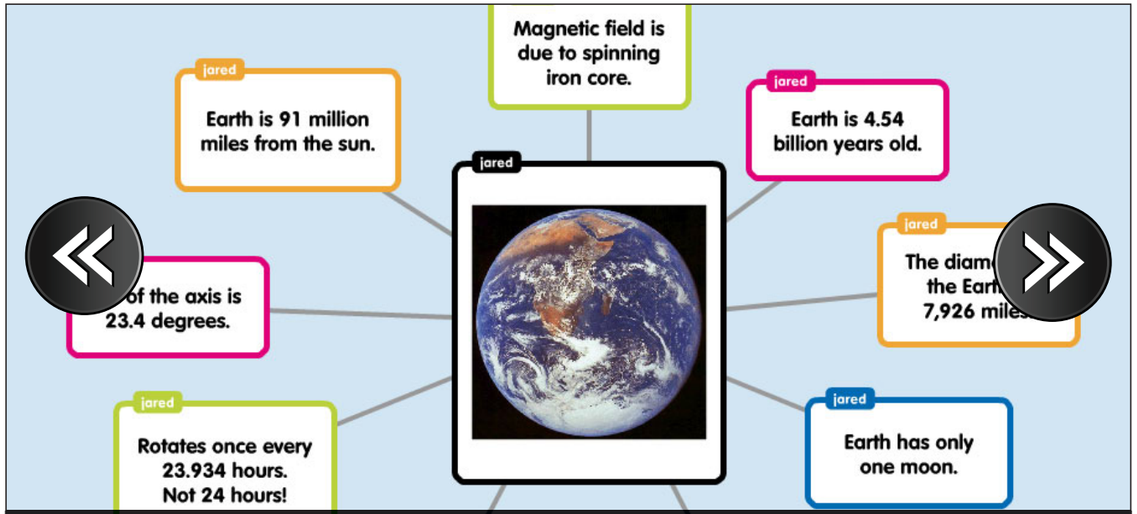
FOR COMPLETE CONFERENCE INFORMATION AND TO REGISTER, GO TO FETC.ORG

PRODUCED BY PUBLIC SECTOR EVENTS GROUP

Product Roundup

Slideshow: 7 Note-taking Apps

The latest hardware, software and services



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 note-taking apps and websites.

rollout

Automating Workflow

Moore Public School District (OK) is using workflow software to help manage the rebuilding of its IT organization following an intense tornado that ripped through the town on May 20, 2013. Moore's technology department has turned to ServicePRO, a Web-based application from Help Desk Technology that provides automated business process workflow, asset and document management and collaborative features such as chat and remote screen sharing. The application can be hosted on a private cloud or a public cloud and adheres to the Information Technology Infrastructure Library (ITIL). *Read the full story.*

Tracking Student Data

Six New Jersey school districts have adopted a new Web-based system for tracking student performance data. The districts — **Butler Public Schools**, **Cherry Hill Public Schools**, **East Brunswick Public Schools**, **Franklin Township Public Schools**, **Freehold Regional High School District** and **Garfield Public Schools** — have selected Performance Matters' assessment and data management system (ADMS) and SGO Module. ADMS collects and evaluates performance data from various sources, then turns that information into actionable intelligence for teachers and administrators. *Read the full story.*

Text a Tip

A Maryland school district has voted to implement a tip text service for a year after a 60-day pilot program in two high schools generated reports of students contemplating suicide, passing nude pictures of other students on Instagram, bullying, smoking e-cigarettes and dealing drugs. In a December 2013 board of commissioners meeting, **Queen Anne's County Public Schools** decided to adopt Text-a-Tip 4 Schools from Text2Them. The district-branded "Text 2 Stop it!" was then tested in **Queen Anne's County High School** and **Kent Island High School** and will now be deployed to other schools. *Read the full story.*

newreleases

AV & Presentation

- Barco Expands ClickShare Collaborative System with New Base Unit
- NetSupport Giving Away Classroom Management Suite for Chrome
- FrontRow Releases iOS-Based AV Control App for Teachers
- ShareStream Revs Online Video Platform and Media Management System

Enterprise Systems

- Red Hat Rolls Out CloudForms 3.0, Enterprise Linux OpenStack Platform 4.0 Beta

Infrastructure & Facilities

- Dell Rolls Out Gigabit APs for 802.11ac Networks
- All-Flash XtremIO Array Offers 250 TB Capacity
- Akitio Releases Bus-Powered 512 GB Thunderbolt SSD

Click here for new releases

Mobile Computing

- Aleratec Introduces Tablet Charging Stations
- Dell Rolling Out Chromebooks for Education
- Google Rolls Out Tablets with Google Play for Education
- Apple Updates MacBook Pro Laptops, Reveals Next-Gen Mac Pro Workstation Details

Security

- Impulse Point Integrates SafeConnect with iboss Secure Web Gateway for BYOD Security
- Bradford Adds Hyper-V Server 2012 Support in Network Sentry 6.2

Teaching & Learning

- Drag-and-Drop Programming Tool Alice Updated
- NetSupport Giving Away Classroom Management Suite for Chrome
- Open Source Moodle 2.6 LMS Adds Grading Tools, Improved Editing of Course Materials
- Moodle 2.5.3 Released, Moodle 2.6 Passes QA Testing

On Jan. 23 at 5 PM ET, learn more about De León's innovative use of technology in an edWeb.net webinar hosted by *THE Journal*'s Christopher Piehler.

DANIEL DE LEÓN, MODERN LANGUAGE INSTRUCTOR/EDUCATIONAL TECHNOLOGIST, SANDIA PREP, ALBUQUERQUE, NM

INNOVATOR

>> MAKING BYOD PART OF THE PLAN

Being an independent school can be both a blessing and a curse when it comes to educational technology. We aren't tied to any requirements, but without such guidance it's easy to get lost. So our head of school recently commissioned the Technology Leadership Committee, which I chair, to draft the school's first technology strategic plan. Out of that, we decided to formally implement a BYOD policy. This was a big step for us. A lot of teachers, including myself, have been allowing our students to bring their devices, but through this formal process we can look on a schoolwide basis at what our students have, what more we need to provide and how the technology is being used in classrooms.

>> WHY I'M A BELIEVER

By making technology more available to all students, we are personalizing the instruction process, giving all learners the opportunity to go at their own pace. As a teacher, I can facilitate that process and see where students are getting stuck — which may not be the same at the same point for every student. The other important component [of a BYOD approach] is collaboration. For this generation, sharing information is very intuitive, and that's enabled by technology.

>> SOCIAL MEDIA OPENS NEW AVENUES

Last year the curriculum in one of my Spanish courses involved using social media in the educational process. Everything students created had to be communicated through a social media platform of their choice. All of the classroom lessons were designed and recorded by the students with video and text presentations, they were put up on the social media, and the students had to include some type of interactive communication. This increased accessibility made it easier to get an understanding of the language. But beyond that, with social media you remove the walls of the classroom and invite others to participate. People from outside the class were responding to our posts, and they were asking good questions about what we were studying, as well as recommending other sites to reinforce what we were doing. Unlike using a static, finite textbook, [using] social media sparked interest in pursuing other avenues related to language.

>> FROM LABS TO APPS

When I started as a teacher here in 2000, everyone was talking about helping students build 21st century skills, which had a lot to do with instructional technology. Being in the language department, the first thing I wanted was a language lab: a computer center with software to play videos, record conversations among students and have them listen to the dialogue. At the same time, we started seeing the emergence of mobile devices, and I realized that bringing these devices into the classroom would be much better. You no longer had to interrupt the flow of learning by taking the students to a new physical space to use technology. A few years ago, I piloted a program to bring in netbooks, and showed the administration how having them in the classroom was a much better model. So today, with so many students having mobile devices and with all of the applications that they have, BYOD makes so much sense. the

MY TOP 3

De León shares his tips for using social media in the classroom.

Andrew Trotter

Big Business Speaks Out for the Common Core

The standards are taking fire from a variety of groups, but they have some staunch supporters in corporate America.

Any businessman worth his salt will tell you that even the best idea or product can fail in the marketplace if it's not backed by an effective ad campaign. Taking this truism to heart, two leading business groups are strongly backing the Common Core State Standards (CCSS) — an education reform they argue is vital for the United States to compete in the global economy.

In October, the U.S. Chamber of Commerce and the Business Roundtable, both based in Washington, DC, announced their intention to launch nationwide advertising to promote CCSS. Both groups have long backed the standards, which are currently being phased in by 45 states and the District of Columbia. The new academic goals are replacing state-crafted standards that many experts say have varied widely in rigor and quality.

"We know what is not working: to have standards so low, [and] to be graduating kids that can't read," said Cheryl Oldham, the vice president for education policy at the U.S. Chamber of Commerce, which represents thousands of businesses across the country. In some states, students who excelled on state tests have had dismal results on the more rigorous National Assessment of Educational Progress (NAEP). "Everybody in this mobile world should have same set of high standards — whether you're in Mississippi or Massachusetts," Oldham added.

She said that another sign of the need for more rigor in high school is that, according to a 2012 study by the nonprofit Complete College America, half of all undergraduates at four-year colleges and 70 percent of community college students must take remedial courses. In addition, many college students who take remedial courses fail to graduate.

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Meanwhile, the Common Core has been endorsed by the National Education Association, the American Federation of Teachers, many editorial boards

across the country and the U.S. Department of Education. Education Secretary Arne Duncan said recently that in the eight states with Common Core standards in place in time for this year's NAEP, reading and math scores were higher than they had been in 2009.

Common Core in the Crossfire

The initiative's more rigorous academic goals have an obvious appeal to the business community, Oldham said, because they contribute to economic and workforce development. The Chamber's support for the Common Core was low-key until 2013, however, when business members at the state level saw an upswing in local resistance to the standards and urged the national umbrella organization to ramp up its policy statements and lobbying on the issue. The struggle has continued in recent months, as the Common Core has been under attack from both the left and the right of American politics.

That resistance worries Marc Tucker, the president and CEO of the National Center on Education and the Economy, in Washington, DC. Tucker, who has studied education standards in the U.S. and abroad since the 1980s, had no role in the development of the Common Core but says he is a "cheerleader" for the initiative.

"I don't think it's a tempest in the teapot," said Tucker. "I do think the Tea Party has decided this is a horse they can ride." He said that a significant portion of Americans is afraid that their way of life is threatened, and they are very angry about that. "Folks on the far conservative right and many libertarians have managed to use the Common Core and everything that comes with it to persuade those Americans, in particular, that there is a vital threat to their liberties, coming from a quarter they didn't expect."

"We're in a crossfire," said John Engler, the president of the Business Roundtable, a business group whose members include many of the nation's largest corporations. Speaking before a roomful of education journalists in Washington last fall, Engler, a Republican and former Michigan governor, noted that the Tea Party movement portrays the Common Core as a pet project of President Obama's, which he said is "way off base." Opponents have also mischaracterized the initiative, he said. "People are going to create a straw man, and go ahead and torch it down."

Among the criticisms lobbed by conservatives is that the Common Core is a national mandate and that it imposes a specific curriculum that usurps state and local control of education. Oldham replied that the Common Core is "basically a set of high goals about things you need to do by end of first grade, second grade, etc. How you get there is totally within the purview and control of local organizations."

Other critics of CCSS include some education researchers, with the most well-known being Diane Ravitch, a former assistant secretary of the U.S. Department of Education. Ravitch argues that materials and assessments developed to implement the Common Core are expensive, poorly designed and set up students to fail. She reportedly advised teachers and school officials in New York to boycott the Common Core initiative. And teachers unions, while supporting the standards, have many questions about whether enough funding will be provided to train teachers and to purchase high-quality curriculum materials.

It is not clear whether opposition could derail the Common Core movement. A survey last spring of state education officials conducted by the Center on Education Policy found that few expected that their states would back out of the initiative during the current school year. The officials did express concern, however, about whether they would have adequate resources to implement the Common Core. Leaders in some states that adopted the Common Core have distanced themselves, cosmetically, by not using the CCSS terminol-

ogy. In a few states, legislatures have balked at funding changes in support of the standards.

NCEE's Tucker said that there will be plenty of places where the initiative could stumble. "There is the danger that implementation will be faulty. The public will be angered if the tests are not be particularly good or are used badly. There's some risk that blame on implementation [problems] will be laid at the feet of the Common Core itself," he said.

VIDEO: ExxonMobil has supported the Common Core with this ad and by implementing the academic goals in the teacher academies it supports.

Taking Action for CCSS

The Business Roundtable's Engler believes that teachers are the most effective advocates of the Common Core, but that business can help provide "clarity" about the need for the standards. Neither his group nor the Chamber of Commerce has released details about their planned ads to promote the Common Core. "We've had to rework elements as the Common Core debate has changed shape and moved into different states," said a Business Roundtable spokesperson. Engler and Thomas J. Donohue, the president the Chamber of Commerce, did coauthor an op-ed piece that was widely distributed in syndication in August. "America's public K-12 education system isn't making the grade," it began.

The group behind the first national ad campaign in support of the Common Core, however, was ExxonMobil, which featured the standards in its "Let's Solve This" ad series promoting better science and math education. According to Patrick McCarthy, the executive director of the ExxonMobil Foundation, the Common Core segment aired during television broadcasts of The Masters golf tournament in 2012 and 2013. The 30-second ad (which you can watch at left) summarizes the problem and the plan, then invites viewers to join in support.

ExxonMobil has also bolstered the Common Core by implementing the academic goals in the teacher academies it supports, McCarthy said. "We have worked with those to incorporate the Common Core standards into the materials we're giving and the things we are teaching to those teachers."

When asked what advertising message he would recommend to convince skeptics, Tucker, the academic standards expert, suggested that Americans face a stark choice: skills or poverty. "In the modern global economy, the future of people with low skills is very bleak," he said. "What a worker knows is the key to what he or she is going to be able to make." He concluded that, "Our principal competitors now are providing all their kids a kind and quality of education that they used to provide only to their elite. If we don't match their achievement, the proportion of people in our society who are poor will grow very rapidly." the

Andrew Trotter, a freelance journalist and editor in Washington, DC, has reported on education and technology for more than 22 years.

NEXT:
10 tech skills every educator needs

10 TECH SKILLS THAT EVERY EDUCATOR SHOULD HAVE

We surveyed educators around the country to get a snapshot of the key tech competencies in 2014. BY GREG THOMPSON

IN JUNE 2005, *THE Journal* ran a story on the "20 Technology Skills Every Educator Should Have." Written by Laura Turner, a computer technology instructor at Black Hills State University (SD), the recommendations in the article were based on her experiences teaching in the college of education at BHSU. (See the sidebar on page 17 for the complete 2005 list).

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Year in and year out, that story is among the most read on our website, even though the advice is almost nine years old — which, in technology years, is about two lifetimes.

Curious to see how much the necessary skill set had changed over the years, we decided to do an update on Turner's article. This time, however, rather than relying on the opinion of a single academic, we used the more 21st century method of crowdsourcing. In an online survey, we asked our readers a simple question: "What tech skills should every educator have?"

From nearly a hundred responses, we compiled a list of the 10 most popular. What's interesting is how neatly the most-mentioned skills from the survey dovetail with those that Turner identified in 2005, even as new competencies made this year's list. Without further ado, here are our top 10 tech skills that every educator should have, annotated with comments from the people who use them.

1) Searching the Web efficiently: A third of the survey's respondents advocated a back-to-basics review of browsers, targeted searches and key words — all in the name of finding credible and relevant information online. Or, as David Withrow, the network administrator at **Harford Day School** in Bel Air, MD, put it, "The Internet is the information backbone of the world. Deciphering quality from junk is essential."

Jule Barta, a curriculum development manager in Redlands, CA, added, "Many teachers do not know how to do effective searches. If they are taught how to search the Web more efficiently, it will help them expand their knowledge and be able to teach the students the same skill."

2) Mastering Microsoft Office and basic word processing: Those familiar programs in the Microsoft Office Suite — Excel, Outlook, Word and PowerPoint — may be relatively old, but they are still vital tools for many educators.

Hiramys Santiago, associate professor at the University of Puerto Rico at Aguadilla, listed competency with the "productivity tools" found in Office as the most important tech skill an educator should have. "Effective use of the word processor, presentation software and spreadsheets," said Santiago, "are essential for class management and material production."

Beyond the infinite mysteries of the 12 drop-down menus found in Word, the venerable art of typing is part and parcel of the "Office" world, according to Marcia Rhinehart, a preK-12 librarian at the **Sturgeon R-V School District** (MO). Rhinehart said, "Good typing skills are important since they are used every time a teacher sits down at a computer. Teachers need to effectively communicate to everyone in their school world

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— including parents, students, administrators and community members."

3) Being willing to learn new technology: Does a mindset really count as a tech skill? According to survey respondents, the answer is a resounding yes. The response took many forms, but it all came back to "stay curious" and "be willing to learn from students."

Jamie Back, a math teacher at **Cincinnati Country Day School** (OH), suggested that educators, "develop a grit/growth mindset. Be willing to try new things, persevere through issues that come up, and keep focusing on a goal of using technology in a way that increases student understanding of the material."

4) Connecting with social media: The paradigm-shifting influence of online networking has clearly infiltrated the halls of education. Respondents touted the importance of platforms such as Twitter, Instagram, Pinterest and Goodreads; as well as the more general practices of podcasting and videocasting.

As Jane Matthews, library media specialist at **Franklin Community High School** (IN), explained it, "Social media expands communication between all constituents — community members, students, teachers and administration. We are able to showcase what we do and why. We can build relationships and share the workload."

5) Sharing and collaborating via YouTube and blogging: "Collaboration is important," said Richard Snyder, a teacher-librarian at **Lake Washington School District** in Sammamish, WA, adding that educators can, "use these tech tools to share, receive ideas, and learn."

Many respondents mentioned video creation as a key skill for today's educators. "Humans are visual beings," said Kristy Vincent, the director of visual learning at **Hardin Independent School District** (TX). "Educators must know how to create video to share processes, products and accomplishments."

"What better way to show documentation of activities going on than video-making," enthused Diane Southard, a teacher at **Joplin Schools** (MO). "With more and more educators finding the uses of digital portfolios, this is a great way to document skills."

When it comes to teacher (and student) collaboration off-camera, Lori Lalama, a computer educator in the **Clifton Public Schools** (NJ), turns to blogging, which fosters the "sharing of ideas, thoughts, suggestions and possibilities regarding a specific topic in an online format."

6) Unlocking the potential of mobile devices: The 1-to-1 implementations in many school districts mean that more students than ever are bringing tablets, netbooks or smartphones to school. "So many schools are going with tablets, or kids have them at home," said Carole Zei, a technology teacher in the **McHenry School District** (IL). "Teachers need to know at least a few basic apps to use in the classroom."

A respondent who chose to remain anonymous said, "Teachers should use the technology that comes in the building with students to show how they are not

SETTING AN EXAMPLE

VIDEO: ISTE CEO Brian Lewis offers his answer to the question of whether some tech skills are basic and others are more advanced.

just for personal 'fun' use, but also for gaining additional knowledge," adding that, "Students seem to have a disconnect with why they would use their phone in the classroom. They think it is just for texting, taking pictures, etc. However, they could text survey responses, take pictures of things that related to what they are learning, or use Twitter as a back channel to comment on what is happening during a lesson/activity."

Linda, a teacher/tech coordinator at a private school, added, "Many teachers are afraid of what might happen when they put [mobile] computers in kids' hands," but, "If they develop procedures and routines for computer use and stick to them with consequences for students who abuse, the kids are able to reap the learning benefits of the technology."

7) Reaching out with e-mail: According to those who answered our survey, basic e-mail skills should include attaching and downloading files, as well as safely opening attachments. "E-mail really is essential," said Barb Podkowka, a teacher and director of professional development at **Virginia Beach Friends School** (VA). "This is the best way to communicate about students to families, regardless of your time or place. Organization and filing is important. The less time you spend looking for things the more productive you are. Organizing/filing documents and other information into readily accessible folders is crucial."

8) Making your point with presentation software: Even if many districts are encouraging their teachers to be the "guide on the side" rather than the "sage on the stage," PowerPoint, Prezi, Keynote and a variety of screencasting apps are still prevalent in the classroom.

Lake Washington's Snyder said, "Presentation technology allows us to create an environment that can't be brought into the classroom," adding that, "Presentation tools help that happen, be it a PowerPoint that motivates, or a firsthand account captured on video."

9) Googling it: The company that added a verb to the English language is so ubiquitous that it might be taken for granted in today's tech environment. With that said, innovative educators praised the versatility of all things Google.

HONORABLE MENTIONS

The ubiquitous interactive whiteboard narrowly missed the top 10, a testament either to its changing role in the classroom or its potential obsolescence in an increasingly mobile world. The concept of "digital citizenship" also received attention, no doubt a response to the very real problems of cyberbullying and the unique growing pains of educational interaction online.

Roger Matthews, a teacher at **Newfoundland & Labrador English School District** in Canada, said that teachers should be prepared to "serve as the models for establishing the societal norm for behaviors and actions in the digital world," adding that, "Digital roles and responsibilities add new dimensions such as anonymity and distance, which may provide users with both a sense of comfort to participate in a digital world, or with a freedom to do harm. We must be the front line for establishing levels of acceptable norms."

Finally, new technology can be incredibly daunting for educators dealing with so many other challenges. Richard Snyder said that everyone in education must rise above their fear of the new. "Fearlessness is the most important skill," he said. "Fear of failure, not having control and of someone doing it better — or having already done it — will keep us from trying something that may just change how we teach and how students learn. Be fearless with technological integration, and you can't possibly fail."

"Not everyone has access to MS Office products," explained Kim Reynolds, a career and technical education teacher at **Arizona Call-a-Teen Youth Resources** in Phoenix. "Google Docs is a free, anywhere-you-go 'office suite.' Add to that the forms you can create, and it is a very valuable skill. [Google] Forms can be used to collect data, do assessments, take polls, etc."

Denise Wright, a virtual science instructor and team lead at the South Carolina Department of Education, added that, "Google Apps are important, since they allow a teacher to work smarter, not harder. You can design your own quizzes, collect information on a form, design a presentation, get your e-mail or type up a document that can be published on the Web. Foremost, this tool can be used for teacher/student collaboration." Wright went so far as to say, "I could not live without my Google Apps."

10) Getting ahead in the cloud: Google factors into the mix again in the final item on our list, because virtually every function of the iconic brand is "cloud-based," allowing educators to conveniently access materials online.

Diane Southard, a teacher in Joplin Schools, enthused that, "Google is important because you can access your work from any computer, anywhere."

Google is by no means the only game in the cloud, however. Our respondents also pointed out the importance of Microsoft SkyDrive, Pearltrees (a visual and collaborative curation tool) and the online file sharing service Dropbox.

In the end, the consensus among those we surveyed was that the specific tool is less important than a working knowledge of cloud collaboration. As Cynthia Reid, a health teacher at **Inter-Lakes School District** in Meredith, NH, summed it up, "We have embraced Google and clouds. It is a must-know skill, or you are lost working in our district." the

Greg Thompson is a freelance writer based in Fort Collins, CO.

TOP TECH SKILLS, CIRCA 2005

Here is the list of the most important tech skills from *THE Journal*'s 2005 article "Top 20 Technology Skills Every Educator Should Have."

- Word-processing skills
- Spreadsheet skills
- Database skills
- Electronic presentation skills
- Web navigation skills
- Website design skills
- E-mail management skills
- Digital cameras
- Computer network knowledge applicable to your school system
- Downloading software from the Web (including e-books)
- Installing computer software
- WebCT or Blackboard teaching skills
- Videoconferencing skills
- Computer-related storage devices (disks, CDs, USB drives, Zip disks, DVDs, etc.)
- Scanner knowledge
- Knowledge of PDAs
- Deep Web knowledge
- Educational copyright knowledge
- Computer security knowledge
- File management and Windows Explorer skills

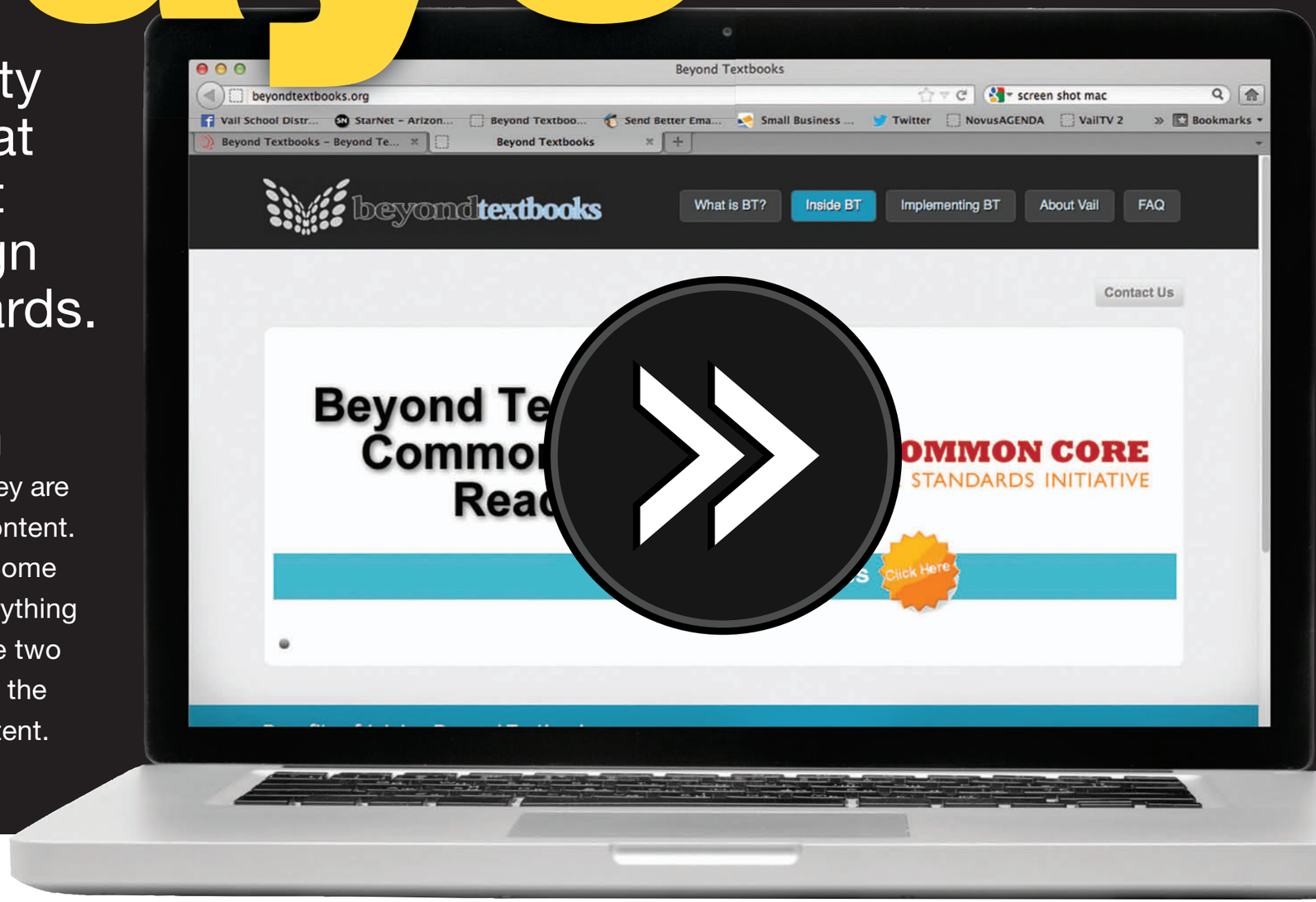
NEXT:
3 ways to build a digital content library

3 Ways to Build a Digital Content Library

Districts are mining a variety of sources for materials that meet the needs of the 21st century classroom and align with Common Core standards.

BY BRIDGET MCCREA

AS DISTRICTS IN 45 STATES put the final touches on their Common Core-aligned curricula, they are depending more and more on digital educational content. But where do all these new materials come from? Some districts look to outside vendors, others create everything they need in-house, and some use a hybrid of these two approaches. Here's a look at how educators across the country are building their repositories of digital content.



The Hybrid Approach

According to Matt Zuchowicz, director of educational technology services for the 20 school districts served by the Santa Barbara County Education Office, these districts were among the first in California to develop an online portal to deliver digital content. Zuchowicz said, "We built out the 'shell' of the portal and then filled it in using a number of streaming resources." The portal is populated with teacher-produced digital content as well as materials from outside sources like Lesson Planet, World Book and Mouse 101 (a local firm). Video streaming comes from CaliforniaStreaming, a service that is supported and run by 17 county education offices in the state. Economies of scale have worked in SBCEO's favor. "We buy at discounted rates because we're buying in bulk," Zuchowicz said.

The SBCEO and its partners keep tabs on all digital content to ensure that it adheres to copyright law. For example, some videos can only be streamed, not downloaded. "We monitor all of that very closely," Zuchowicz said, "and we trust that our vendors are meeting the same copyright laws." (For an education law expert's take on this issue, see *THE Journal*'s article "Staying on the Right Side of Copyright in Education.")

As part of its digital strategy, the SBCEO has also been filling its coffers with materials that align with the Common Core State Standards. This is where external vendors can prove their worth, according to Zuchowicz, who after several years of working with online content platforms said that attempting to develop 100 percent of the materials from scratch would be challenging for the typical district. "Realistically," he explained, "it's hard for a district to have the internal capacity to create the necessary *depth* of digital resources to provide a rigorous, CCSS-aligned curriculum for students."

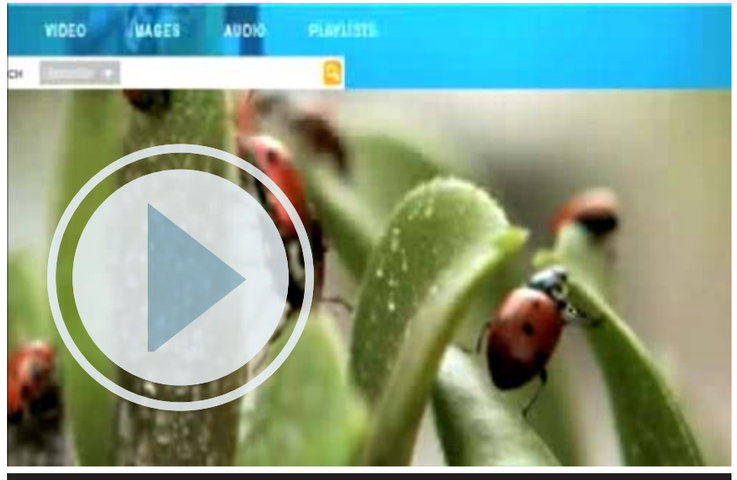
At the same time, he added, "Teachers are really hungry for these lessons that we're getting from sources like Lesson Planet, which offers content that's already aligned with CCSS."

The Wiki-based Library

As K-12 schools nationwide explore their digital content options and try to come up with solutions that meet the needs of the 21st century classroom and align with CCSS, districts like **Vail School District** in Tucson, AZ, have a head start in the race to develop and maintain digital content repositories. According to Debbie Hedgepeth, assistant superintendent, the district worked with 50 others across the state to create a wiki-based library of lesson plans, quizzes, interactive Web links, ideas, presentations and related content.

That information wasn't always so well organized and accessible. "We originally had stacks of binders that housed all of the materials created by our teachers," said Hedgepeth. "Our goal was to find a good way to organize that information on the Web so that teachers, students and parents could access it." After deciding on the wiki-based approach, the district turned to its teachers — all of whom already had a

CALIFORNIA STREAMING



VIDEO: Matt Zuchowicz from the SBCEO shows how an online video archive can help teach to Common Core standards.

strong grasp of their respective curricula and the related state guidelines for that content. This fact alone would become a key driver of Vail School District's DIY approach to digital content development.

"Our teachers started creating their own content because they knew what their targets were and how to keep their students focused on those goals," Hedgepeth explained. "Over time, more and more instructional content was added to the repository and used — to the point where we haven't done a textbook adoption in over 10 years."

According to Hedgepeth, the district takes a two-pronged approach to quality control for digital content. On one hand, teachers are entrusted with the task of providing only reliable, effective and useful resources that help their students reach their educational goals. "The teachers' names are attached to these resources," said Hedgepeth, "which have to be of incredibly high quality." To maintain quality control, the district has an employee who searches through postings to ensure that they indeed are rigorous enough and that they match objectives.

"If anything problematic comes up (i.e., a copyright issue with posted content)," Hedgepeth explained, "we send a short e-mail message to the poster and ask him or her to address it (by, say, contacting the original publisher for permission to use the content) and adjust and/or replace as needed."

When it comes to CCSS, Hedgepeth said that some of the content has been reworked to align with the new standards, but notes that the assessment piece remains something of a mystery. "Our target is fuzzy because we're not yet familiar with the level of CCSS assessment," said Hedgepeth, noting that while sample questions are available, the state of Arizona has yet to select a specific assessment firm, "so our teachers are creating their own tasks, problem sets and instructional resources to align with CCSS to the best that we are able to interpret them right now."

Vail School District's digital content challenges go beyond fuzzy targets and extend into classrooms where students are being asked to learn in very different ways than they are accustomed to — and certainly differently than their parents did. "The learning objectives that parents are used to — and that they encountered themselves — are changing," said Hedgepeth. "Because of this, some of them are struggling to support their students at home."

Hedgepeth believes that, "We have to allow time for the students and teachers to learn and let the struggle run its course, even when it feels uncomfortable." To help, the district modified its year-round calendar to include a "fall break" that gives teachers time to build out their digital repositories and upload tasks and lessons. "That way," said Hedgepeth, "when students come back from break the lessons are ready to go for the next two quarters of the school year."

To further help teachers create new lessons, the district allocates several days during each quarter for professional development. In October, for example, a group of math teachers spent a Friday collaborating on new course development. The district also created a video that teachers can use as a tutorial on how to capture video and transform it into classroom content.

In some instances, just letting teachers know that they're not alone in their struggles to develop, maintain and update digital content goes a long way. "We send out messages letting everyone know that we expect that struggle, that it's perfectly normal and that we'll all work through it together," said Hedgepeth. "Teachers want to do their very best for their students and when they don't achieve that goal, it can cause a lot of stress. We want our teachers to know that we're right with them through the struggle."

The Third-Party Partnership

From Margaret Pfaff's perspective, deciding whether to develop digital content in-house or outsource it to a

third party was simple. Pfaff, the director of curriculum and instructional resources at **Carroll County Public Schools** in Westminster, MD, said her 26,000-student district faced a number of barriers to the DIY option, including copyright issues, time constraints, cost and lack of digital content expertise. "Our resources are very limited," said Pfaff, "and we don't have the staff available to create digital content."

Since September 2013, the district has obtained its digital content from Discovery Education. An initiative funded by a competitive grant from the Maryland Digital Learning Innovation Program provides students with 24/7 access to digital science textbooks (what the company calls "techbooks") and other dynamic, curriculum-based content. As a result of this partnership, which Pfaff said wouldn't have been possible without the grant support, the district can now offer teachers and students an array of digital resources without worry over copyright issues or time and resource constraints.

When asked if those resources align with CCSS, Pfaff said that the district will address that issue "as part of the bigger picture with teachers in terms of the pedagogy involved with any multimedia resource." And while the district doesn't have to worry about the actual design and development of the content, she said her department does assess the effectiveness of the resources. It also provides a robust professional development component (as required by the grant), which comes as part of the Discovery Education package.

"We're providing training for our science teachers who are using the textbooks and for the other teachers who are using streaming," said Pfaff, who believes that the "trainer of trainers" model is the best approach in this case. "We're bringing in four teachers from each school and providing them with the training that they'll use to support their own colleagues."

Carroll County Public Schools recently wrapped up phase one of its professional development process. The district has also kicked off its use of streaming content, having just finished up one such rollout in October. So far the results and feedback have been positive, said Pfaff. "Teachers are excited about using the resource because it gives them quality material to use in their classrooms. We haven't run into any snags yet."

Making the Choice

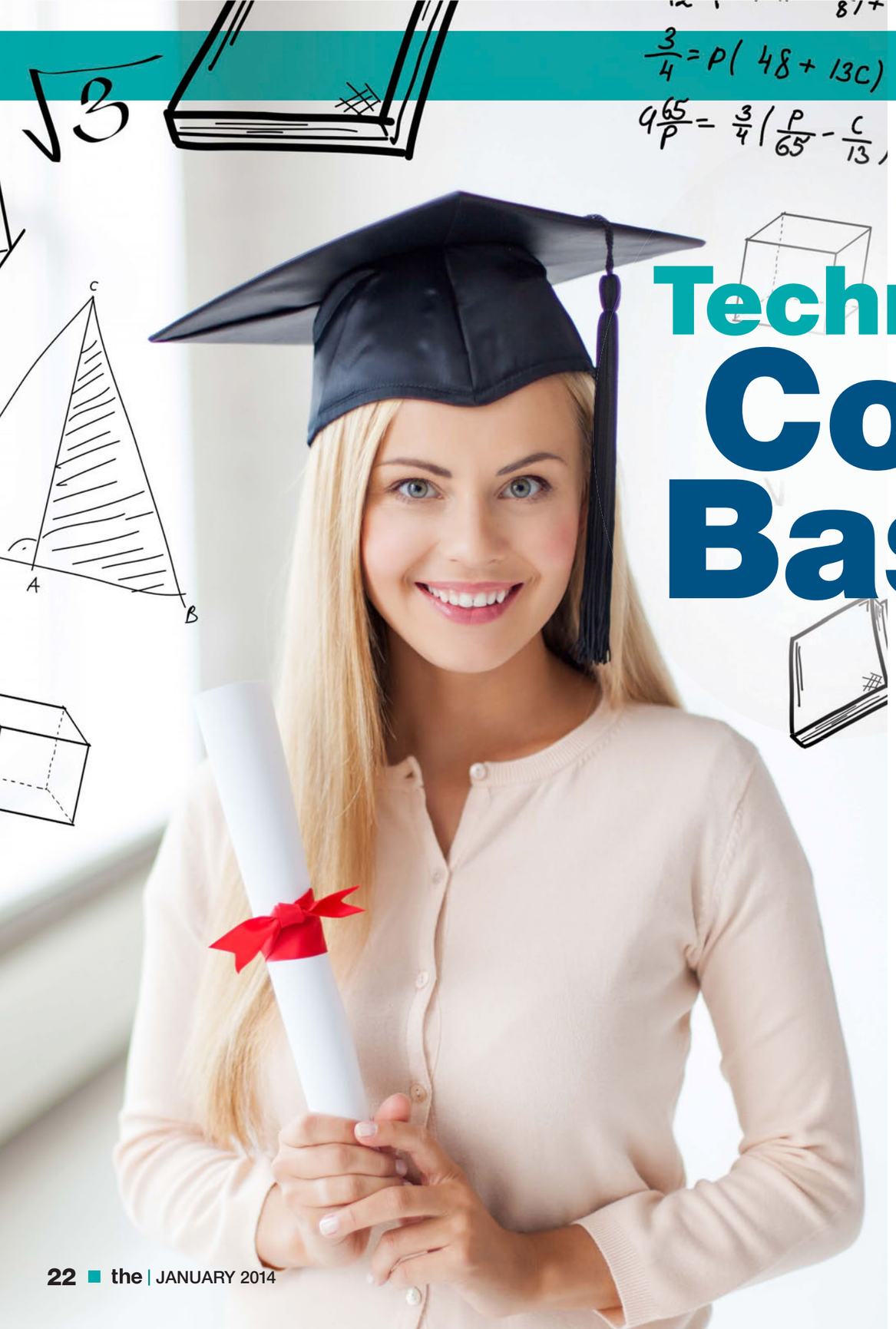
Whether districts choose to buy or create their digital class materials, Lesson Planet's founder and CEO Jim Hurley said that the key is finding an approach that is sustainable, flexible and built on a commitment to quality content.

And while finding, curating and publishing online materials can be a monumental undertaking, that doesn't mean it can't be done internally. It just means that DIY districts need the right combination of human and financial resources to make this approach work. Open educational resources (OERs), for example, can help districts populate their digital repositories and complement materials that have been produced internally. "Most OERs can be modified, adapted, taken into the classroom," said Hurley, "and transformed into new [digital resources]."

No matter what content-creation method a district chooses, Vail's Hedgepeth said that adopting a long-term view — rather than grasping at a quick solution to the issue of CCSS alignment — is the key to success. "We've been honing our approach for years, and we're still working on it and adjusting it as needed," said Hedgepeth, who noted that her district's progress has been "remarkable in light of the thousands of students and families who have gone through the process so far." the

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

NEXT:
Tech for competency-based learning



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Technologies That Unlock Competency-Based Learning

In New Hampshire, the shift away from an educational system based on "seat time" is well underway. Here's what educators there have learned. BY DIAN SCHAFFHAUSER

THE EDUCATION COMMUNITY felt a jolt in August 2013, when the Carnegie Foundation for the Advancement of Teaching released a report calling for the dismantling of the "Carnegie Unit." Beyond the obvious irony of the announcement, readers may have been surprised to learn that one state — New Hampshire — was way ahead of the game. Since the 2008-2009 academic year, the schools there have been shifting from the traditional time-based model of crediting students for sitting in a seat and paying attention for about 180 days to a model that requires them to prove mastery of competencies. What New Hampshire schools and districts have learned in subsequent years is invaluable, because it points out the challenges that districts in every other state will face as they move toward what could become the next great transformation of education. And as with all education transformations in the 21st century, technology is playing a key role.

From Carnegie to Competency

At the core of competency-based learning are two elements: a competency itself, and an assessment by which that competency is measured. According to Steve Kossakoski, CEO of New Hampshire-based **Virtual Learning Academy Charter School** (VLACS), a competency "is the big idea in the course."

Rose Colby, a competency-based learning and assessment specialist and education administration faculty member at New Hampshire's Plymouth State University, added that competency includes a "student's ability to transfer concepts and skills across content areas." A sample competency might be the following: "Students will demonstrate the ability to comprehend, analyze and critique informational text in print and non-print media." As Colby declared, "It's big, it's demanding, it fits all the criteria for a strong statement, and my kids in my course are probably going to interact with that competency multiple times across the year in multiple units of instruction."

Plenty of states have seen the virtue of the competency approach, so they're offering it as an option to districts. To succeed, though, it's got to be all or nothing, said Joe DiMartino, president and co-founder of The Center for Secondary School Redesign. "The mandate for earning a high school graduation diploma in Vermont for probably the last 20 years has been either demonstrating mastery of the state's standards or earning 20 Carnegie Units. The 'or' is what everybody has done," he said. "If the traditional way of doing it is an option, the traditional way of doing it is going to remain."

In New Hampshire, a local control state, every district made its own decisions about the format of its competencies. Nick Donohue, New Hampshire's former deputy commissioner

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of education and current president and CEO of the education reform organization the Nellie Mae Foundation, recalled, "When we passed a regulation saying you need to eliminate seat time and move to competencies, we also allowed different districts to simply tell us how they were going to do that. Some people said, 'We're using the exact same assessments we used last year. We're not really changing anything. We are now calling this our competency based system.'" He conceded that, "It's very hard to make creative broad-scale change in a big system all at once."

From 2008 to 2011, Colby and others in New Hampshire raced from district to district, helping teachers sort out the "competency design" work. She remembered, "You'd go into a school and the English competencies might be great, but 85 percent of the math competencies might be at a low level." So the New Hampshire Department of Education pulled together some of the best districts to develop a "competency validation rubric." As Colby explained, this was a filtering system through which districts could run their competency statements to determine if they were strong or weak.

Incorporating Assessments

As districts were writing competencies, they also had to figure out how to assess them. In retrospect, said DiMartino, the assessments and the competencies should have been created at the same time. In a competency-based model, assessments need to demonstrate that a student has mastered a competency at some level. They can take the form of teacher-designed quizzes and tests (those didn't disappear), teacher observations of projects, or some other form of measurement agreed on by the district. Colby explained that the assessment element "becomes a series of snapshots that determine where a student is along that road."

Importantly, students can prove their competency outside the traditional classroom through community service, internships, apprenticeships, online courses, private instruction and other endeavors, all captured under the umbrella term "extended learning opportunities" or ELOs. The idea of the ELO grew out of work done by Kim Carter, currently the executive director of nonprofit QED Foundation and chief education officer for **Making Community Connections (MC2)**, a charter school in Manchester, NH, that uses the competency-based model. Her inspiration came out of "Secretary's Commission on Achieving Necessary Skills," a 1992 report from the U.S. Department of Labor that examined skills young people would need to succeed in work. "It made a very cogent argument for a competency-based high school model," she explained.

ELOs were a basic way for students to demonstrate learning through means that were outside of the classroom. For example, Carter recalled a student who earned some biology credits by working with infection-control officers on a hand-washing experiment at a local hospital. "Ultimately, he took hand soap pumps and put lines on them to see how much soap was used. He gathered data. Then he analyzed the data and presented it to the hospital and infection control board," recalls Carter. "That's pretty meaningful learning."

How Do You Track Competencies?

Because competencies are not course-based, they can be disaggregated. A student may tackle an ELO, such as turbocharging a car, that enables him or her to prove mastery in a traditional discipline like science or math.

Donohue noted, "We very artificially break down standards as though they live in complete isolation. They don't. Scientific method, critical thinking and collaboration are what scientists do. They do them together in complex ways."

Under the competency model, said Kossakoski, "a student can personalize their education in any way. They can set up their own playlist," so that aspects of each learning endeavor can contribute to the accumu-

lation of competencies. “You may be able to say, ‘Boy, this kid did a lot of writing in this internship, so there’s a competency in writing they can meet.’ Or they had to make presentations. Well, there’s a public speaking competency. And they did learn a little bit about chemistry. Maybe there’s something about chemistry they can master. But not the whole course.” Having the freedom to pick and choose competencies gives educators the flexibility to allow students to get credit for a variety of experiences.

Once those individual competencies are sorted out, however, keeping track of them isn’t easy. For instance, in the turbocharging project, who monitors students’ progress: the science teacher, the math teacher, an academic adviser? This is where existing district technologies may need some help. While learning management systems can help teachers stay on top of test scores, grades and homework assignments for individual courses, they aren’t designed to take the “snapshots” of progress (inside and outside of school) that competency-based assessment requires.

VLACS, for example, uses a “highly customized” version of Moodle as its learning man-

OWNING THEIR LEARNING

VIDEO: At Pittsfield Middle High School, student-led conferences are a key part of the plan to promote competency-based learning.

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agement system, which takes the brunt of supporting competency tracking. Another, **Pittsfield Middle High School**, had to modify its existing student information system, Pearson's PowerSchool, to accept competencies and provide reporting that could be accessed by teachers, students and parents.

According to Stan Freeda, specialist for Educational Technology and Online Learning in New Hampshire's Department of Education, "The lack of a comprehensive competency-based learning management system that will collect student artifacts and set up a grading system which includes a portfolio that can be tied to the state/district data system is holding the field back."

The education technology market is "inching ahead," said Donohue, and when it does catch up to market need, he added, watch out for unintended consequences. If you know, for example, how a student is tracking against goals based on the competencies he or she is achieving, who needs a big standardized test to measure progress? Donohue believes that testing as we know it stands a chance of becoming an anachronism. He quoted Harvard University's Chris Dede, who uses the analogy of how department stores used to close for a couple of days to take inventory. "Now of course, inventory is taken every time somebody goes [through] checkout."

Digital Learning and 1-to-1

New Hampshire's competency model takes the Carnegie Unit precept that time is the constant and learning is the variable and reverses it. Learning becomes the constant and time is the variable. Students can take as much or as little time as they need to master a competency — as long as they're making progress. That's the same thinking that has driven online learning for years. So it makes sense that the state is home to VLACS, a competency-based charter school for grades 5 to 12. Tuition-free to in-state students, VLACS caters to learners who want to take courses not offered by their own schools. It also has another distinction: If a student needs help working on a single competency out of eight or 10 for the course, he or she can tackle it at VLACS as well.

Kossakoski said that the entire school is predicated on the competency model, "from our funding structure through our salary structure." There is no school calendar; a student can start on just about any day of the year. The 2007 charter to the state specifies that the school wants to be paid by competencies completed, not by seat time. "If a student comes in and takes two competencies out of 10, we'd get 20 percent of the funding for the full course," Kossakoski explained. Last year, he estimates, the school delivered approximately 60,000 competencies.

An important part of success in online learning, Kossakoski pointed out, is building relationships between the kids and their instructors. The instructor is always there to provide help, monitor progress and offer feedback. On the instructional side, teachers stay in touch with students via Adobe Connect chat and videos. But the bulk of instruction is asynchronous, he said, "with a lot of teacher intervention." To catch students when they're available, full-time teachers cover the day instructions, part-time adjunct teachers fill night hours and an academic help desk staffed by VLACS covers another hundred hours through the week.

One of VLACS' customers is **Pittsfield School District**, which started offering the VLACS option to its students several years ago. Superintendent John Freeman said, "We have less than 600 kids, preschool through 12. The size of our staff is small. We offer a minimal [number of] electives and we don't offer AP. We have minimal opportunities for dual enrollments here in the district. But VLACS is one of the vehicles that we use to allow students to really expand beyond the borders of Pittsfield."

Last year, Pittsfield Middle High School hired a dual-enrollment and online learning coordinator to help students maneuver through their competency

endeavors and to "facilitate the broadening of opportunities," Freeman said. The person holding that role comes in a little bit later in the school day and stays after school hours and is there to support and connect kids with online learning sources. That includes connecting them with the program at VLACS to address whatever competencies they may be lacking.

Pittsfield also implemented a 1-to-1 program in its fifth through 12th grades. Freeman said that students had interest in learning beyond the traditional school year. To help facilitate this, he said, "Many of our students are connected with professionals outside of the school who are operating in the field and then coordinate with certified teachers here to gain credit for learning experiences." For example, he cited one student who got a summer job working in the genetics lab at the University of New Hampshire. Another student was interested in doing a study of the biblical Abraham and his influence on the contemporary world. Freeman said, "We could never offer a course on that. So we questioned what other opportunities are out there for our kids. It naturally led us to a 1-to-1 [program]."

When Pittsfield began its transformation, the district invited the community to work with faculty and staff to figure out what the school should look like and what graduates should be able to do. After consulting not just students' families but also local political and business leaders, the district set out to provide what Freeman calls "authentic experiences, hands-on learning. We wanted kids graduating with a plan, and with the skills, knowledge and talents to activate that plan. That's been our marching orders since the 2008-2009 school year." the

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

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