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# FETC 2020 recap

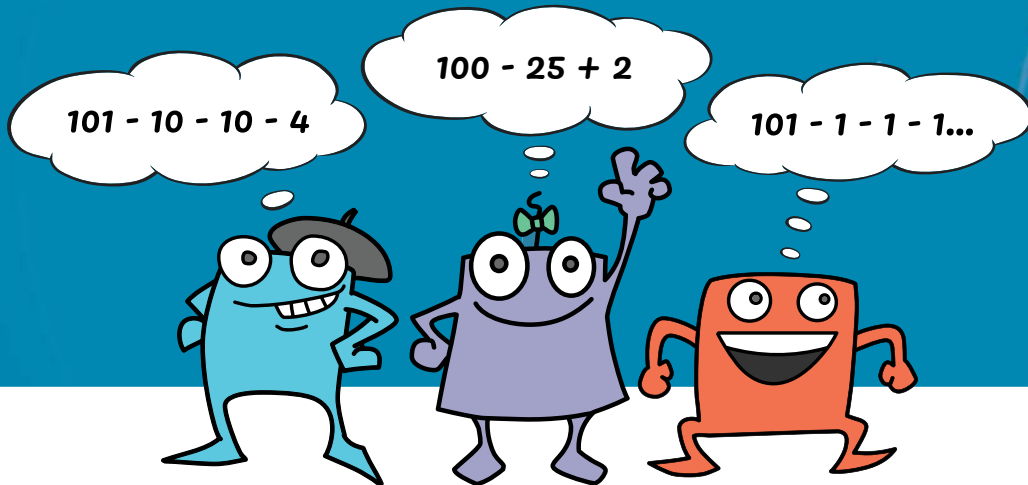
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—Eric Weiss, executive editor

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## DA Events by color

While reading this issue, look for the colors with individual articles. These indicate a related DA event that you may want to attend, as well as the target audience.

- **Superintendents Summit**  
current superintendents
- **Superintendents Academy**  
aspiring superintendents
- **CAO Summit**  
chief academic officers; executive directors/assistant superintendents of curriculum, teaching and learning, and innovation; directors of curriculum, deputy superintendents
- **CIO Summit**  
chief information officers, district technology leaders

- **CIO Academy**  
chief information officers (CIOs), aspiring CIOs, technology leaders and leadership teams
- **Future of Education Technology Conference**  
technologists as well as administrators educators with interest in technology
- **Academic Esports Conference & Expo**  
academic, technology and athletic leaders

## Gender options

Learn why a school safety team convinced one district to allow students to choose nonbinary gender on registration forms. [DAmag.me/nonbinary](https://www.districtadministration.com/nonbinary)

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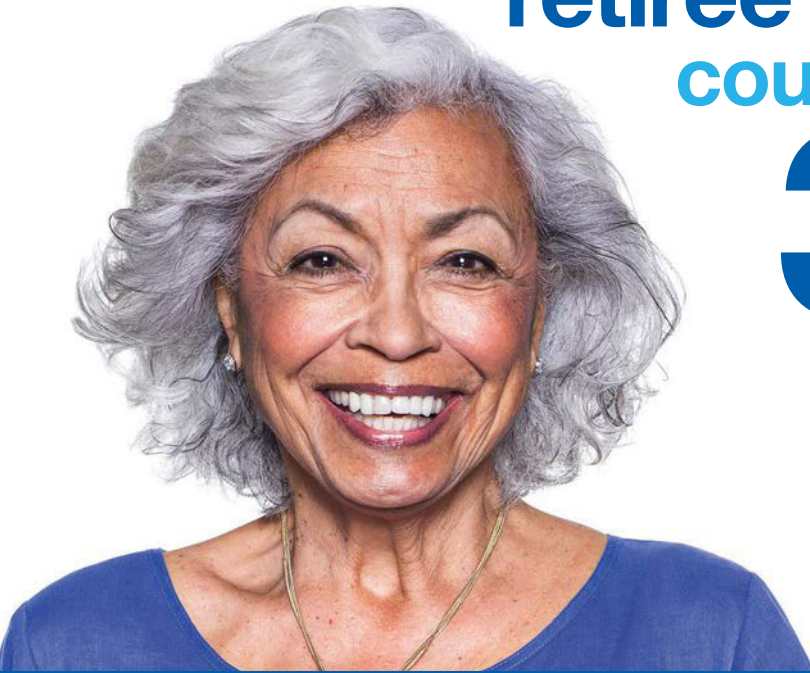
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<sup>2</sup> UnitedHealthcare HouseCalls Member Survey data, January 2016-December 2017.

<sup>3</sup> Centers for Medicare and Medicaid Services, 2019 Part C & D Medicare Star Ratings Data for UnitedHealthcare H2001 contract, October 10, 2018. Medicare evaluates plans based on a 5-star rating system. Star Ratings are calculated each year and may change from one year to the next.

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# Scaling online preschool in isolated communities

**North Dakota state superintendent says lifelong academic success relies on early learning**

*“You don’t have to recover from a good start.”*

*In a state that doesn’t fund preschool, it’s a phrase that drives North Dakota’s superintendent of public instruction, Kirsten Baesler, as she and her team work to expand early childhood learning to remote, isolated communities. Baesler’s agency recently contracted with online preschool Waterford UPSTART, which provides free computers and broadband access to learners.*

*Students and a family member are asked to spend 15 minutes, five days a week, working on the company’s early literacy curriculum. It also provides mentors who check in with children regularly and offers coaching for parents, who are encouraged to set a regular schedule for working on the curriculum and to teach kids about K-12 basics, such as waiting in line, cleaning up after themselves and playing well with friends, Baesler says.*

*About 700 of North Dakota’s approximately 10,000 4-year-olds will enroll this year. Baesler spoke to District Administration about how the program will get off the ground and the importance of families helping to prepare children academically and emotionally for kindergarten.*

## **What’s the outlook for offering early childhood education in North Dakota?**

We have a large geographic area, with districts that have 20,000 students and some, with as few as eight—and 90 of those districts are classified as isolated. When you think about bringing kindergarten readiness programs to scale across the state, it’s a challenge when so many districts are that rural, remote and isolated.

But we want those rural zero-to-5-years-olds to have the same opportunities as children living in large districts. A benefit in North Dakota is that we are not a tech desert. All of our public schools have a minimum of 100GB connectivity—and last summer North Dakota made history by connecting our very last farmhouse with high-speed internet. Every home, every farmhouse, now has access to broadband connectivity.



**We want to make sure we’re helping families be their child’s best and most influential teacher.**

We’re also making a significant effort in North Dakota to increase family engagement, not only in getting kids academically ready for kindergarten but in helping families understand those social-emotional skills.

## **Some people say an online preschool is basically screen time and not appropriate for young children. What do you say to them?**

We wholeheartedly agree that kids shouldn’t be in front of devices all the time. But Waterford UPSTART limits instruction to 15 minutes a day and it must occur with a ▶



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family member. It isn't simply putting a 4-year-old in front of a device and leaving them to their own means to interact with a computer. They will be working on letter sounds, identifying phonemes, pairing letters with sounds and writing letters—the basic, fundamental things that happen for kindergarten readiness.

And the fact that Waterford UPSTART supplies all the materials is huge. If families can't afford a high-speed broadband connection, those costs are also covered. So, it's really no cost to our families—we want to make sure we're helping families be their child's best and most influential first teacher.

### **You're starting with about 700 students. Are you already thinking about how to scale the program?**

Yes, because demand is going to increase. For one, our migrant and refugee populations are growing.

We are a small state agency—only 88 team members—so we pride ourselves on our partnerships. We're already working with the Department of Human Services to provide evidence of family engagement and kindergarten readiness. So, when our state legislators convene again, we can showcase the impact and provide them with an understanding of how they can support further investment.

We have about 10,000 four-year-olds in North Dakota. We'll make an impact on about 700 but we'll have another 9,000 who are going to be left unserved.

## See for yourself

Here are videos with Kirsten Baesler and two others describing the growth of online preschool and how it works in North Dakota:

- Nikeya American Horse, a father who lives on the Standing Rock Indian Reservation, talks about how online learning augments what his son learns in preschool. [DAmag.me/nikeya](https://www.dmag.me/nikeya)
- Stephanie Ewert, a formerly skeptical Head Start teacher, discusses how her own son goes online to prepare for kindergarten. [DAmag.me/ewert](https://www.dmag.me/ewert)
- Superintendent Kirsten Baesler explains that she brought online preschool to North Dakota to ensure students get on the right academic track and to support parents. [DAmag.me/baesler](https://www.dmag.me/baesler)



**MOVING ON UP**—A student and his family celebrate his graduation from a Waterford UPSTART online preschool course. The nonprofit partners with states, such as North Dakota, as well as individual school districts and other agencies, to provide instruction when families can't access in-person programs.

### **How are you letting everyone know about the program?**

With our partners in the Department of Human Services and childcare providers, we are getting the word out to families in childcare centers, child nutrition programs, summer meal programs and breakfast and lunch programs across the state. We'll try to canvass anyone in the state who works with 4-year-olds.

### **Why are preschool and the early grades so crucial?**

We spend billions of dollars helping K-12 students in credit recovery and remediation. You don't have to spend those dollars and you never have to recover when everybody has a good start in kindergarten. Students can spend time learning new things rather than having to catch up.

As educators, we've always had gut feelings and hunches, but with the advance of technology, we're able to actually see what's going on in a child's brain when they're being exposed to early learning and interacting with family members—their brains are just firing with energy.

So many neural connections are being made in the early years of a child's life. Nurturing those neural connections and synapses is so important for future academic success and for becoming a whole being, a person, an individual. **DA**

*Matt Zalaznick is senior writer.*

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## Getting ‘ruff’ on violence and the presence of harmful substances

*How school districts use specially trained dogs to increase student safety*

Police department canine teams are familiar to all, and comfort dogs increasingly spend time in schools.

Now, in some districts, security officers are patrolling their buildings with specially trained dogs that can follow the sound and odor of gunfire and firearms to neutralize threats, potentially before a situation happens. These dogs can pull their handler toward a weapon and grab onto a shooter’s arms until incapacitated. School officials and their canine companions continuously train and even live together to strengthen their bond. Meanwhile, other schools regularly have dogs and handlers from outside the district visit their campuses to sniff out harmful substances.

### **First canine-school team**

The Cumberland County Technical Education Center in New Jersey has recruited its first dog to train and patrol a school with a district employee—Steve Manera, a campus safety security officer. Every day, Manera and his Dutch shepherd named Meadow walk through campus, which includes the high school and Cumberland County College.

Meadow is named after Meadow Pollack, a victim in the Parkland school shooting.

“Our school and college boards had some concerns about introducing a canine that most people associate with law enforcement and military duties,” says Andres Lopez Jr., director of campus safety and security at the high school. “But they were willing to try anything that we believed would keep our kids safer.”

In July 2018, Manera and Meadow began training with Skool Dogs, a group that handles and trains canine

teams to detect a potential or actual shooter. Meadow was the first dog to graduate from the school-oriented course last March. “The first level of training involves becoming familiar with each other,” says Lopez Jr. “The dog actually lives with the Manera family.”

Manera and Meadow also trained at the Cumberland County campus. “The dog has to be familiar with not just the inside of the high school, but outside, along with the 14 other buildings at the college,” says Lopez Jr. “There has to be a lot of training because if this dog bites someone in the school that wouldn’t go over too well.”

Meadow has been socialized enough that students can pet her with Manera’s permission and guidance. “She’s not beyond approach, but she does act as a major deterrent,” says Lopez Jr. “She has a presence that demands attention.”

### **‘The perfect fit’**

By March, Coach Jason Wallick of Garaway Local Schools in Ohio and a Belgium Malinois named Sailor will have been a team like Manera and Meadow for two months. In fact, Wallick and Sailor recently went to Cumberland County to shadow Manera and Meadow for two weeks. “They put me at ease by teaching me what to expect and what I would go through with Sailor,” says Wallick, a safety and security official. “After those two weeks, Cumberland kept Sailor for additional training while I went back to my district, which is another reason why my superintendent liked this setup.”

Sailor was chosen specifically for Wallick, who says they “are a perfect fit.” Sailor lives with Wallick and his family.



**SNIFFING OUT CRIME**—K-9 Sierra inspects cars at the Houston High School with Tim Tefft of Interquest Detection Canines.

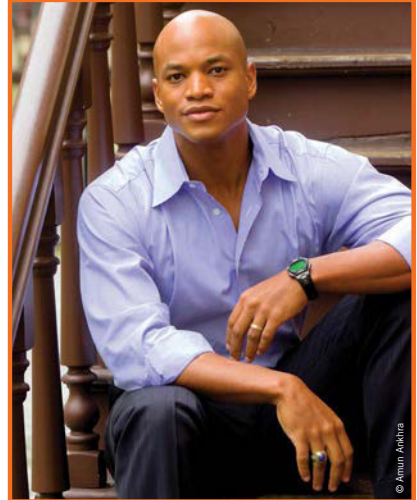
The pair now patrols the district’s five schools every day and participates in numerous school drills—but never with students since many active shooters have been students who attacked their own school.

“The drills are amazing to see because Sailor can be on the other side of the building and start running at 30 mph for the [staged] active shooter, and our handler will release Sailor with no command necessary,” says Superintendent James Millet. “In our training, we had people screaming, jumping and running in different directions, and Sailor didn’t even look at them.”

Trainers currently come to the district twice per year to work with Wallick and Sailor. “You can’t have enough training for something like this when there is so much on the line,” says Wallick.



## WES MOORE Superintendents Summit Speaker (March 24, 2020)

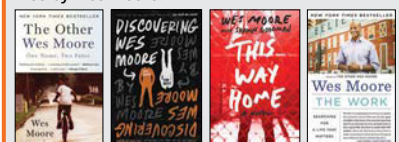


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### INDUSTRY NEWS

**Portland Public Schools** (Ore.) and **Portland General Electric Company** (PGE) will create a comprehensive K-12 curriculum by fall 2021 that explores the causes, consequences and potential solutions to climate change. PGE employees will serve as content experts, teaching students how clean energy can reduce carbon emissions. The district and other community organizations will convene to inform curriculum development.

**Gallup-McKinley County Schools** (N.M.) will use **Edupoint Educational Systems'** cloud-based Synergy Education Platform to manage student, special education and analytics information. Administrators will have the ability to access data in real-time, check student IDs and print hall passes with an optional third-party mobile printer.

**Denver Public Schools** has increased the bandwidth capacity of 132 schools by approximately 500% after leasing **Zayo Group Holdings'** dark fiber private network. The upgrade should eliminate congestion issues caused by video surveillance and will allow teachers to use more digital resources such as streaming media in classrooms.

**Manor ISD** (Texas) has advanced districtwide print security and efficiency using software and units from **Canon Solutions America**. An analog fax line was replaced with RightFax, a computer-based solution that helps maintain compliance with HIPAA laws by managing and distributing sensitive documents such as student medical records. Canon is also supporting disadvantaged students as part of the district's active youth mentorship initiative.

—Steven Blackburn

### Sniffing out harmful substances

Trained dogs are being used to detect substances that should not be on school grounds, too. In January, Houston High School of Germantown Municipal School District in Tennessee received its first monthly inspection from Sierra and her handler, Tim Tefft of Interquest Detection Canines, a private company.

Tefft only alerts Houston High on the day he visits with Sierra, who sniffs each car in the school parking lot for alcohol, firearms, hydrocodone and marijuana. (The two don't venture inside since the school eliminated lockers after going 1-to-1.) "The dog will lie down if she finds a foreign substance," says Bland Chauncey, assistant superintendent of student services. "After inspecting 15 cars, Tim has the dog sniff and fetch a toy to refresh her scent for the entire three-hour inspection."

Germantown officials let parents know that Sierra would not come in contact with their children and provided assurances that their child's allergy medicine, for example, would not trigger Sierra.

Chauncey says, "Any time you can be proactive and provide a service that keeps kids safe and secure, everyone will be on board." —Steven Blackburn



**MEN'S BEST FRIENDS**—K-9 Meadow and her handler Steve Manera (left) pose with K-9 Sailor and her handler Jason Wallick.

### Student activism guides future citizenship

Outsiders may sometimes grumble that school leaders who encourage student activism are indoctrinating young people with certain political beliefs.

While it's true that students are more likely to take action around liberal causes such as gun control or climate change, administrators deliver valuable lessons when they let students promote their beliefs, says Meira Levinson, a Harvard Graduate School of Education professor and co-author of *Democratic Discord in Schools* (Harvard Education Press, 2019). "The complaint will be that these schools are inappropriately using public funds to promote partisan ends," says Levinson, who researches civic education and educational ethics. "But it is developmentally appropriate for young people to be civically engaged and active, and it is a powerful form of learning."

Many educators tend to be nervous about encouraging political activism. Administrators and teachers should therefore make sure students are fully aware of the many forms of activism, such as speaking in public meetings, doing advocacy research and forming community alliances around an issue, says Levinson, who helped create Youth in Front ([youthinfront.org](http://youthinfront.org)), a resource for student activists.

#### Encouraging activism during a high-stakes election year

Activism and productive political discourse will become more pressing issues during the 2020 presidential and congressional elections. It's an opportunity for students to get involved in campaigns locally, and learn to listen and base their positions on evidence, says Alan Singer, a professor of education at Hofstra University in New York.



**GETTING THE JOB DONE**—At Round Rock ISD in Texas, activism is centered on the student advisory board, which has mounted suicide awareness and anti-vaping campaigns in recent years.

#### Leaving a legacy

In Texas' Round Rock ISD, the student advisory board, which comprises representatives from the system's five high schools and 11 middle schools, takes on an annual service project. This year, students are mounting an educational campaign about the dangers of vaping. In the past, the board organized a community walk to raise awareness of teen suicide.

"When there had been a tragedy, they felt adults were fearful to talk about suicide, but the kids needed to talk about it," says Kristina Snow, the board's sponsor and district director of talent development. Her role is to help students "navigate the system" by connecting them with district staff who can, for instance, get the students on agendas for certain meetings or help arrange parent forums.

"These students really want to have a legacy," Snow says. "They're very worried about there being better paths for those who come after them at their schools."

In Virginia, Fairfax County Public Schools now allows students in grades 7-12 a partial absence each year to participate in civic engagement activities such as meeting with elected officials or volunteering for a campaign.

"Civic engagement is something that is emphasized in our government classed," said Fairfax County Public Schools School Board Chair Karen Corbett Sanders in a news release.

#### Walking into the principal's office

In the wake of the 2018 Parkland school shooting, some administrators allowed students to leave class to participate in protests. Other leaders told students they could be punished for walking out—which presents a lesson in itself: Activists of all ages sometimes face consequences for civil disobedience, and students can learn to make that choice, says Lata Nott, executive director of the First Amendment Center at the Freedom Forum Institute.

Activism can also support interdisciplinary learning. School leaders can minimize the potential for disruption by maintaining open lines of communication with students.

Administrators must show they are on the same team as students (and teachers), Singers says. "Students should be able to walk into a principal's office and say 'These are the things we are concerned about.'" —*Matt Zalaznick*

## MOVERS AND SHAKERS

More than a quarter of Idaho's school districts and 12% of the state's charter schools are using Superintendent of Public Instruction **Sherri Ybarra's** mastery-based learning model, which incorporates project and inquiry-based learning. Ybarra is working to provide more PD, supports and networking for member schools. A recent study of Idaho schools revealed a 10-year low of students on three factors: those reporting being bullied, those having overly intimate relations and those smoking cigarettes. Throughout her career, Ybarra has acquired funding to advance technology, learning labs and STEM projects. *Source: Idaho State Department of Education*



**Jesus Armas** has transformed Royal Palm Beach High from a D to a B school—as well as increased the graduation rate by 22% and lowered student disciplinary referrals—since becoming principal 10 years ago. The Florida school suffered high principal turnover before Armas who has overseen the number of students applying to other schools drop by 25% after years of enrollment decline. Armas also helped create specialized programs, including STEM offerings, a naval science academy and International Baccalaureate. Armas was awarded the Palm Beach County School District's principal of the year award for his efforts. *Source: Palm Beach Post*



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### Sensory gardens bring learning to life

A Delaware student’s simple question about how strawberries are made inspired the creation of a school garden that stimulates learners’ senses of sight, sound, taste and smell in ways that support learning and wellness.

#### Lessons in mindfulness

The sensory garden at Forwood Elementary School, part of the Delaware’s Brandywine School District, features fruit and vegetable gardens, and a range of other trees and plants. The colors, textures and scents of the flora can bring classroom assignments alive—such as a writing prompt that starts “When I go outside ...”

The school’s science club also has used the garden to conduct experiments. And fifth graders studying the structures of life can observe how plants change with the seasons and the role of insects in the garden.

When paired with mindfulness techniques, the garden supports students’ emotional health, says Leona Williams, a fourth-grade teacher and trained naturalist who spearheaded the garden’s creation. For example, when she leads students out into the garden, she will ask them to be quiet and feel the textures of the leaves and detect the smell of the magnolia tree.

“The garden helps us as educators find a balance between teaching and



**FRESH AIR TOOLBOX**—Students at Springhill Elementary School, an urban Title I building in Knox County Schools (Tenn.), can de-escalate in the sensory garden by playing wind chimes, tending to fruit and vegetable plants, or checking a weather station.

recognizing that kids have stresses in their lives,” Williams says. “We can take it for granted that kids understand the power of nature to help them relax as well as learn.”

#### Another space to reach out to kids

A classroom or the principal’s office may not always provide the most calming environments for a distressed child who’s trying to get back on track. That’s why students have an alternative—visiting the school garden—at Springhill Elementary School, an urban Title I building in Tennessee’s Knox County Schools.

“If any student is having sensory overload—maybe they’re frustrated because they can’t understand a math problem—they now have an outdoor space to calm down and self-regulate,” Principal Denise Cross says. “They can pick a blueberry or make some noise with the chimes, and within just a few minutes they’re ready to go back to class.”

A Springhill STEM teacher won a \$20,000 grant from a county program to build the garden. Cross suggests that administrators find a teacher to champion the project if they want to build a similar facility.

Springhill educators refer to the gar-

den as the “outdoor classroom” because teachers also use the space for science lessons such as learning the rewards of harvesting the fruits and vegetables at the beginning of the following school year, Cross says.

School counselors also use the garden as a safe place to talk with kids. Educators hold restorative circles there so students having conflicts with each other can work through their feelings together and with classmates, adds Cross.

The garden beds, in particular, have resonated with her students because it’s the first time they’ve had a chance to work with plants, she adds.

“A lot of our children, whether it’s because of poverty or trauma, struggle to express their emotions in ways that are non-disruptive,” Cross says. “This provides us with another space where we can reach our kids.” —*Matt Zalaznick*

#### DATA POINT

# 7,101

—Number of school gardens in the U.S.

*Source: USDA Farm to School Census of 18,000+ public, private and charter school districts, conducted in 2015 as a follow-up to a census conducted after the Healthy, Hunger-Free Kids Act of 2010 established the Farm to School Program within USDA*

#### MOVERS AND SHAKERS

Superintendent **D’Andre Weaver** supervised DeSoto ISD’s recent removal from credit-watch after financial transparency and internal control improvements earned the Texas district an A-plus from Fitch Ratings. Weaver also shifted the district’s HR focus to provide staff more resources from onboarding to retirement, to locate and promote internal talent and to recruit more high-quality staff to fill existing position gaps. Additionally, Weaver helped create Collaborative Learning Cycle, a framework that provides teacher PD, instructional training and lesson delivery assessment prior to classroom implementation.

*Source: Focus Daily News*

—*Steven Blackburn*



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## How to stay connected to students (and stay young)

Listening and elevating student voices at school can help all of us succeed

By Michael Niehoff

**L**azy, disrespectful, irresponsible, lacking a work ethic. It seems that every generation repeats these words about younger people.

Why? It could be that older folks just don't understand them. They remember things one way, and anything that deviates from that is bad.

As a longtime educator and leader, I'm here to dispel the notion that our young people are anything less than their parents or grandparents.

When I graduated from high school in the '80s, I never knew one of my peers to volunteer for community service. Some 20 years later, I watched as hundreds of my students partnered with charitable organizations, raising money and community awareness. Now, I see them starting their own companies, establishing nonprofits, creating websites and blogs, and becoming activists who truly impact the world.

It's our duty as educators to advocate for young people and always work to find the best in them. And we should not only find the best, but promote it, celebrate it and appreciate it.

Here are six tips for staying connected to your students—while keeping your administrative processes fresh and your outlook more youthful.

**1. Talk to students regularly and ask questions.** It seems simple right? We should be having conversations

### It's our duty as educators to advocate for young people and always work to find the best in them.

with our students anytime we can—about school or anything we normally discuss in public and professional situations. If you haven't done this often, it may take a while for students to believe you actually care and are listening. But it's worth the effort to understand them and their concerns. It matters.

**2. Involve students in governance and decision-making.** Students have great ideas, so ask for their opinions. This can be done formally with surveys and feedback, or personally in focus groups and more. When I was a high school site leader, I included students in all interview panels. Indeed, when we had close and competitive interviews for teachers, finalists competed by leading a class and getting student feedback.

**3. Give students more leadership roles.** How can we elevate the student voice in our school settings and beyond? When I was a student activities director and leadership teacher, I didn't emcee many events. The students did. I didn't run event planning meetings. They did. As a principal, I had students come to professional development gatherings to inform us about their learning experiences and environment. Think about inviting students to professional learning communities and staff meetings.

**4. Be a mentor.** Young people are always seeking mentors beyond their families and immediate circles. Your influence will have more long-term impact than any curriculum. Being a mentor is not about telling young people what to do, but rather getting to know and supporting them.

**5. Spend time with students inside and outside school.** Yes, we have class time, project work, practices and rehearsals. But what about unstructured time? Open up your room or space at lunch, and they will come. I always loved taking students to competitions or other events. That's when you learn a lot about who they are. Good educators, especially leaders, will find ways to connect with young people where they work, socialize, serve, gather and live.

**6. Listen to their music.** One of my best personal memories is when my late grandfather took an interest in my music. I was a 14-year-old aspiring hard rocker, and he made an effort to listen and ask questions. I'm sure he didn't appreciate the music, but he tried, and that mattered. If we dismiss students' music, we dismiss them. Talking with students about music, I learned there was always something creative and relevant in it, and it was another way to connect.

Our young people deserve our respect. Demonstrating our faith in them is fundamental to their development. Let's forget about antioxidants and vitamin supplements to stay young. Rather, let's get to know our students and stay connected to them. **DA**

*Longtime educator Michael Niehoff writes about transformational leadership and PD.*

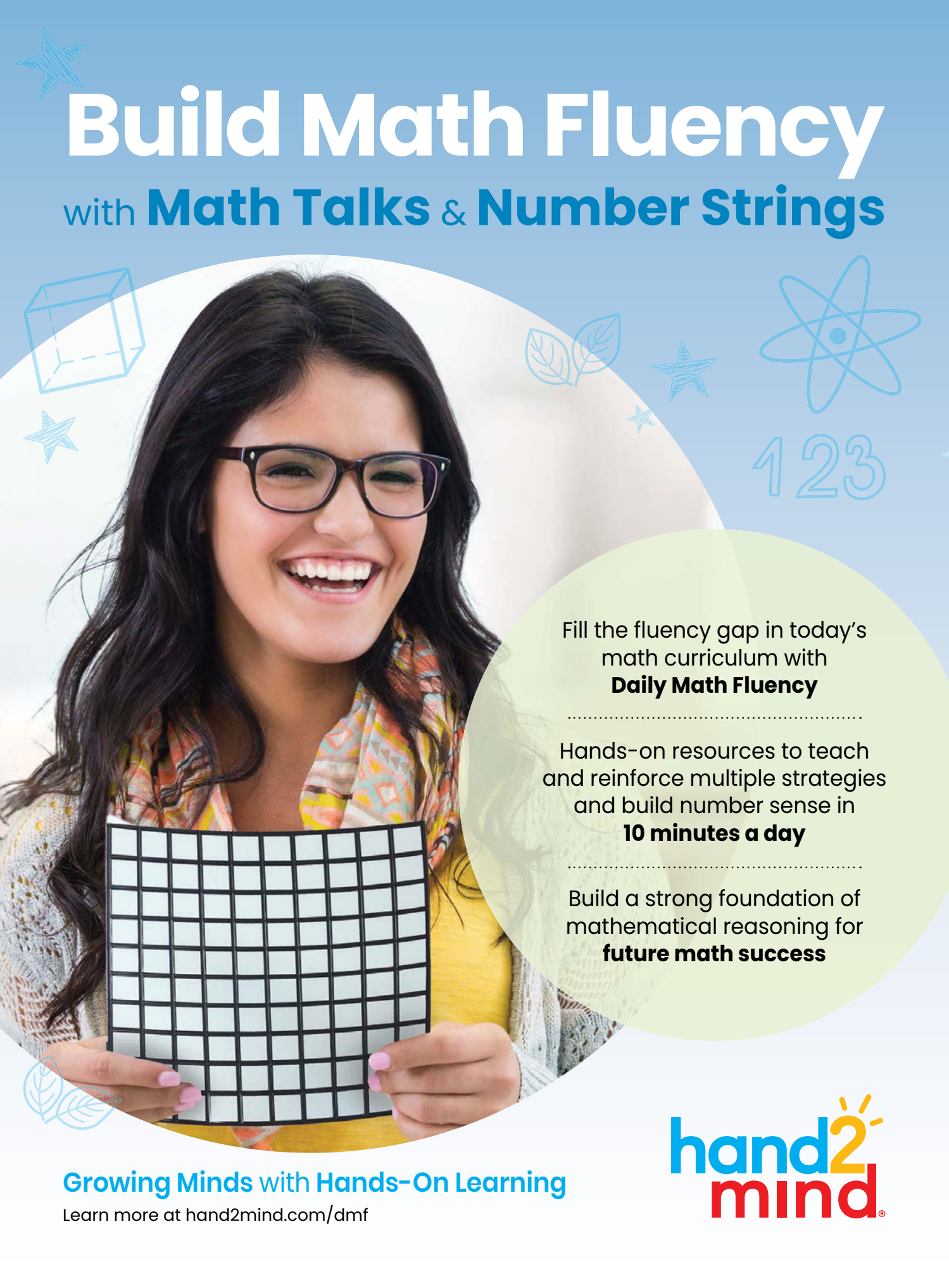


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**Jan Richardson**, Ph.D., is the best-selling author of *The Next Step Forward in Guided Reading*, an education consultant, and a leading expert in guided reading with experience as a Reading Recovery® leader, a staff developer, and a teacher of every grade from kindergarten through high school.



**Ellen Lewis**, M.Ed., is a literacy consultant with more than three decades of literacy teaching experience as a reading teacher and Reading Recovery® teacher. She is the author of *The Next Step Forward in Guided Reading Study Guide* as well as several children's books.

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Category Winner: Klein ISD 20 • Category finalists 26 • Computing inclusivity 27



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# How virtual learning coaches support powerful school growth

Equipping educators with customizable PD and data to change student outcomes

## Q&A with **Christine Fletcher**, Virtual Learning Coach, Istation

### **What are the critical elements for creating a sustainable professional development model for educators?**

First, there needs to be a shared understanding of what constitutes effective teaching and robust data behind that to create an aligned, rigorous and conventional student-assessment system. Second, essential common strategies to improve teacher practice, such as high-quality coaching, are needed. A well-designed teacher development process with clear communication drives measurable learning for students. Lastly, it is vital to have administration buy-in. PD needs both teachers and administrators to develop the vision, language and tools to observe, analyze and lead classroom instruction.

### **How do virtual PD coaches help educators uncover growth opportunities and support objectives?**

Effective PD should focus on classroom instruction and use research-based content. Technology training for instructors unlocks the learning potential in students through the use of integrated tools. At Istation, our virtual learning coaches are former teachers who possess real-world instructional experience. They create customized, hands-on workshops that help navigate our resources, and provide best practices and proven-to-work approaches that are meaningful for the educator.

### **Why is it essential to have data to support instruction and drive professional learning communities?**

Data about students, teachers and administrators supports instruction and the content of active PD. Evidence-based and data-driven approaches to PLCs encourage reflection, inquiry and dialogue. When PD starts with data analysis, it will better align to school goals and meet the unique needs of educators in individual, team and schoolwide PLCs.

### **How does real-time data combined with PD provide immediate action steps and strategies?**

Real-time data helps teachers reflect on, analyze and plan instruction. Teachers who monitor student progress and use data to inform planning and decision-making have higher student outcomes than those who do not. Data can identify at-risk students, provide automatic and continuous progress monitoring, and facilitate differentiated instruction. Istation's PD team helps educators interpret that data through technical support resources and an extensive library of implementation, product training video and step-by-step instructions to help educators see classroom success.




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**“At Istation, our virtual learning coaches are former teachers who possess real-world instructional experience. They create customized, hands-on workshops that help navigate our resources.”**

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# SOLVING REAL-WORLD PROBLEMS ENERGIZES STUDENTS

By Matt Zalaznick

Klein ISD's Innovation Challenges allow learners to design STEM-based solutions alongside industry experts



**CHAMPIONS OF IDEAS**—A group of students explain their idea for protecting houses from flooding during Klein ISD's Day of Design. During the Texas district's annual event, students get feedback on their solutions from industry experts, educators and classmates.

**C**atastrophic flooding caused by Hurricane Harvey in 2017 inspired young people in one Houston-area school district to figure out ways to reduce the severity of similar disasters in the future. Students in Klein ISD took on an "innovation challenge" and prototyped flood barriers to

protect their neighborhoods and school buildings.

Such real-world challenges have now become a linchpin of STEM instruction in the suburban district, which has been recognized as a DA District of Distinction in the category Curriculum & Instruction. "One of the things we're passionate about in Klein ISD is leveraging student voice in the design of learning experiences," Superintendent Jenny McGown says. "We heard from students that they wanted more opportunities to solve real-world problems."

## Klein ISD, Klein, Texas

District size:

**54,049 students**

Superintendent:

**Jenny McGown**

Initiative launched: **2017-18**



### 'Electrifying learning experience'

One Klein ISD school was completely flooded by Hurricane Harvey while many in the area lost their homes and students experienced the disaster firsthand.

"People had such personal investment with the problem of flooding," McGown says. "Our students rose to the challenge



and created an unbelievable solution.”

For the second innovation challenge, “Klein In Space,” students in grades 5-12 learned to design experiments for zero-gravity environments. They connected with other students and experts in the field through the Student Spaceflight Experiments Program, a national STEM initiative.

This school year, the “Operation Lifeline” project is challenging K-12 students to design medical packs to deliver refrigerated medicine to disaster areas.

A highlight of each year’s challenge is the annual Day of Design, which McGown calls “an absolutely electrifying learning experience.”

Students from across the district share their prototypes with each other and with industry experts. Teachers from other schools also work with students, while professionals provide them with feedback and guidance. “The number of industry partners who have provided expertise throughout the challenge has been amazing,” McGown says. “It’s a day where we’re truly breaking open the walls of every single classroom of every single school.”

### Asking for help

Professionals also mentor students as they work on their innovation projects throughout the school year. Connections are made in person and digitally, via Skype, text messaging and other platforms.

“These are skills students need when they graduate—to pick up the phone and say, ‘I’m working on a problem; I hear you’re an expert, so can you help me with it?’” explains McGown.

These relationships have created tighter links to the community. “So often, we tell people outside the world of education about the great things happening in our schools but they sometimes have difficulty connecting to the story of the district in a meaningful way,” she says.

The innovation challenges have also spawned a high school

initiative called KleinHacks, a 24-hour invention marathon during which students code new websites and apps. Students have focused on real-world concerns such as how to create inclusive gaming environments and the prevalence of texting and driving.

“We’ve certainly observed increased student engagement and enthusiasm for the content,” McGown says. “That’s mainly because the challenges are actual problems to solve in the world and students get to do it by collaborating with peers and experts.”

### Fortifying a future workforce

About 1,000 students participate in challenges annually. And since the initiative launched, fifth- and eighth-graders have improved their scores on state math and science tests.

These results gibe with Klein ISD’s “Profile of a Learner” vision statement, which district educators created to foster a classroom culture of risk-taking, innovation and self-reflection, McGown says.

The profile also says that graduates, to lead successful lives, must remain lifelong learners who are comfortable embracing challenges and failing forward. That’s why concepts such as design thinking and service learning now play a transformative role in both the innovation challenges and everyday instruction, McGown says. “Students can’t just memorize content. They have to identify a problem, test, iterate and refine—put their solutions through the whole cycle.”

This mindset will be essential in the workplaces of the future, she adds. “As the world moves more toward machine learning and robots being able to do a lot more things, skills like problem-solving, collaboration and emotional intelligence will be absolutely critical to the future workforce.” **DA**

*Matt Zalaznick is DA’s senior writer.*



“Students can’t just memorize content. They have to identify a problem, test, iterate and refine.”

—*Superintendent Jenny McGown, Klein ISD*

## Innovation station

Students in Klein ISD have participated in three innovation challenges in which they made prototypes of solutions to real-world problems:

- **Water Warriors:** Students made prototypes of barriers to protect homes from flooding in the wake of Hurricane Harvey.
- **Klein in Space:** Students developed experiments for zero-gravity environments.
- **Operation Lifeline:** Students are designing medical packs to deliver refrigerated medicine to disaster areas.

*Editor’s note: Due to a production error, a box accompanying the feature on Poway Unified School District in the February edition of DA included incorrect information. The corrected online version can be found at [DAMag.melpowayusd.com](http://DAMag.melpowayusd.com).*

# 64%

of US 8th graders are not proficient readers\*

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—Jacinta Bryant, Director, Exceptional Children’s Services,  
Charleston County Public Schools, SC



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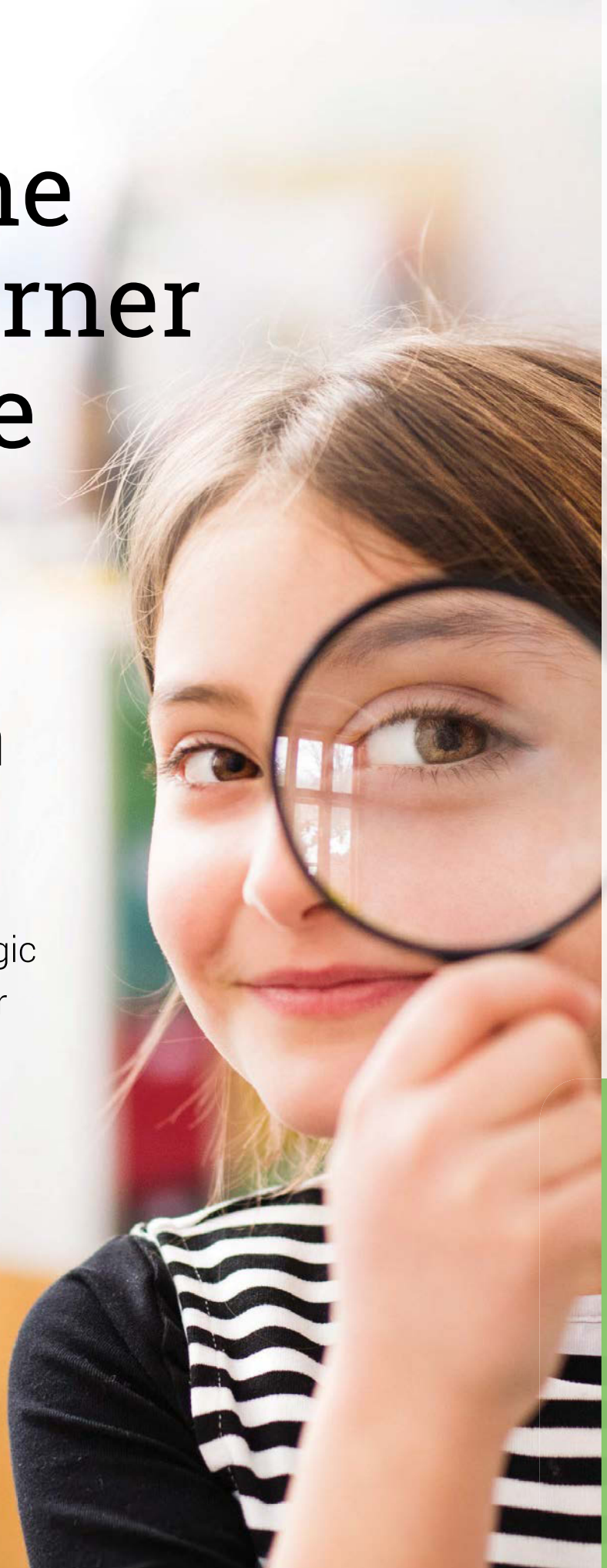
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# Districts of Distinction Curriculum & Instruction category finalists

Five K-12 programs being honored as Districts of Distinction runners-up for their noteworthy programs to improve C&I

By Steven Blackburn

## **INQUIRY AND INNOVATION: RETHINKING THE TRADITIONAL TEACHING MODEL**

**Fayetteville-Manlius School  
District (N.Y.), [fmschools.org](http://fmschools.org)**

**CHALLENGE:** Administrators in this historically high-achieving district had to convince the community about the importance of redefining teaching practices to meet students' changing needs.

**INITIATIVE:** A new inquiry-based model allows personalization in teaching while still adhering to core curriculum and standards. Classes can collaborate on various tech-based projects, thanks to a library restructuring. Expanded schedules in the library and computer lab give educators more time to co-teach and plan.

**IMPACT:** Over the past three years, language arts, math and science scores on the state assessment have increased. The district now has low discipline referrals and high attendance.

## **THE LEYDEN CO.LAB: REIMAGINING THE FRESHMAN YEAR EXPERIENCE**

**Leyden HS District 212 (Ill.),  
[Leyden212.org](http://Leyden212.org)**

**CHALLENGE:** The goal was to create confident problem-solvers through relevant and authentic experiences to accelerate college and career pathways.

**INITIATIVE:** Co.lab focuses on future-ready skills and dispositions, rather than grades and credits for freshman year.

Students spend four hours per day with a team of six teachers from different disciplines, rather than move from class to class. Quarterly themes involve students working in groups to improve their local communities and the world.

**IMPACT:** Student work has been featured in magazines and video public service announcements. Students spend time at local animal shelters and elsewhere in the community, becoming confident public speakers who advocate for those in need.

## **SENIOR OPTION COLLEGE PROGRAM**

**Camden County Technical School  
District (N.J.), [ccts.org](http://ccts.org)**

**CHALLENGE:** Many students at this Title I district struggled with college access due to economic challenges.

**INITIATIVE:** High school students receive frequent support from Camden County College representatives and high school counselors to help them navigate up to and through their first year of college. High schoolers attend college classes on the college campus as well.

**IMPACT:** Participating high school seniors have been earning a minimum of 24 college credits at no cost to them. Enrollment rose from 13 students in 2013-14 to 94 students this year.

## **BRINGING JOY TO LEARNING Plainfield Community**

**School Corp. (Ind.),  
[Plainfield.k12.in.us](http://Plainfield.k12.in.us)**

**CHALLENGE:** Constant assessments frustrated teachers and made students see school as a chore. Superintendent Scott

Olinger decided to transform an unused natatorium into "something that would bring smiles back," says Director of Communications Sabrina Kapp.

**INITIATIVE:** A K-5 Imagination Lab was created for hands-on learning "odysseys"—such as coding, horticulture, video/sound or construction—for 90 minutes once per month. Teachers "extended the magic of the odysseys into the classroom," says Kapp. All teachers use a middle school-developed Idea Lab to create learning experiences.

**IMPACT:** Student groups test various approaches to find solutions and learn that mistakes don't mean failure. "This success has allowed teachers to think in new ways about lessons, says Kapp. The result: less paper, more projects, less anxiety and more excitement.

## **OUR GRADUATES ARE COLLEGE AND CAREER READY**

**Alabaster City School District  
(Ala.), [acsboe.org](http://acsboe.org)**

**CHALLENGE:** Administrators wanted the percentage of college and career ready students to match the graduation rate.

**INITIATIVE:** High school students earn readiness "indicators" by achieving college credit, receiving a technical credential, enlisting in the military, and reaching certain scores on the ACT and the ACT WorkKeys. The district provides free ACT and ACT WorkKeys tutoring.

**IMPACT:** In 2019, 97% of students graduated and were considered college and career ready. The class earned more than \$20 million in scholarships and more than 80% enrolled in two- and four-year institutions. **DA**





# COMPUTING INCLUSIVITY

**New levels of collaboration and a willingness to use social media allow teachers to craft more effective instruction**

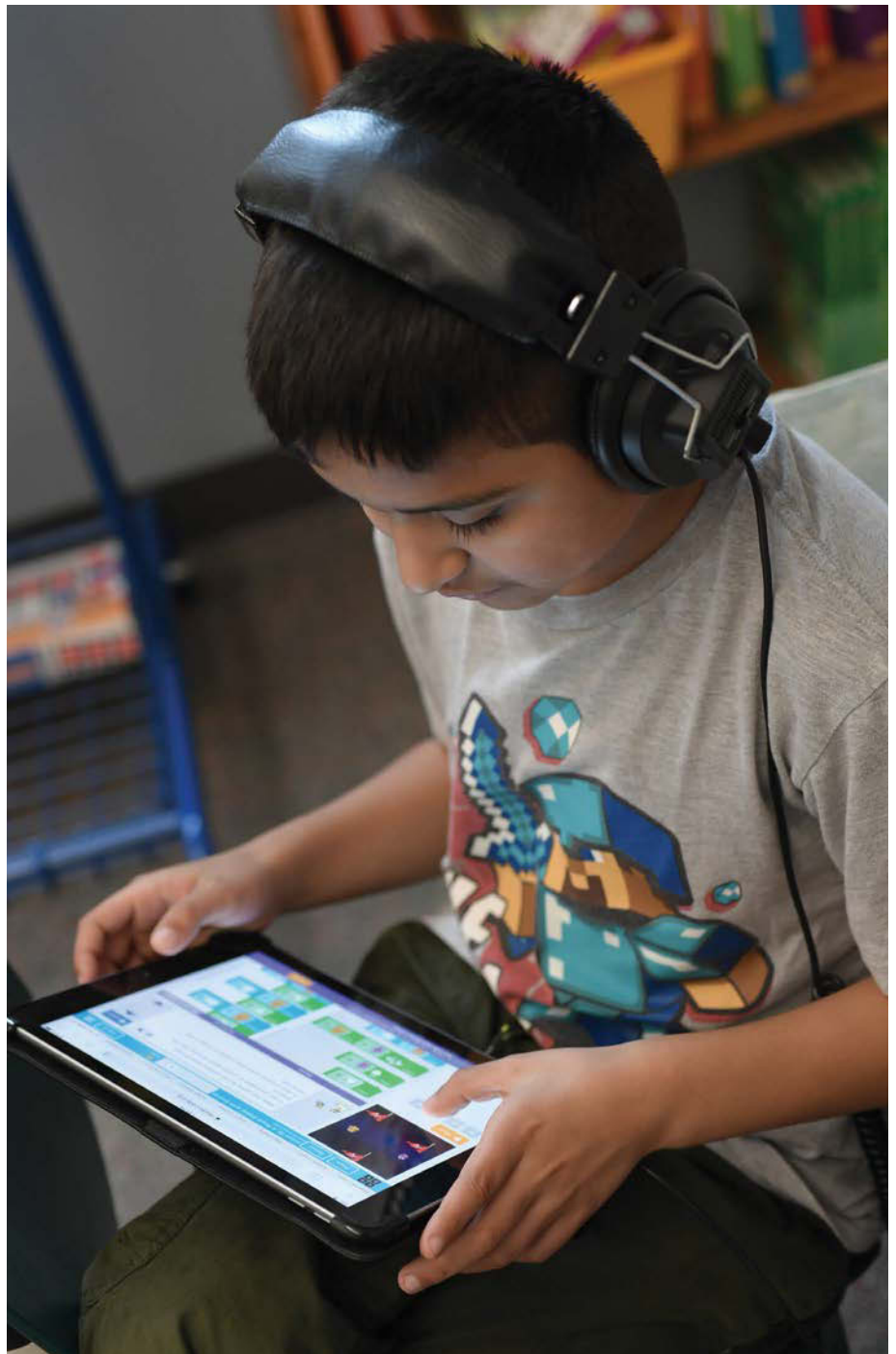
**By Matt Zalaznick**

**W**hile the national demand for STEM workers surges, post-graduation outcomes for K-12 special needs students remain less than promising. But therein lies an opportunity for educators to extend robust computer science instruction to *all* students, says Ellis Crasnow, director of STEM3 Academy, a Los Angeles-area school for students with special needs.

He notes that college students on the autism spectrum are more likely to choose STEM majors than their neurotypical peers. “These kids are drawn toward tech and STEM pursuits,” Crasnow says. “Given the imbalance of huge demand and small supply, it makes perfect sense for them to study STEM so they have a pathway to college and success.”

For instance, students on the autism spectrum have shown a particular ability to debug software because their tendency to have enhanced visual and spatial skills enable them to spot imperfections in cascading lines of codes, he says.

Also because of these abilities, students with autism have a knack for



COURTESY OF VANCOUVER PUBLIC SCHOOLS



**POWERFUL PROGRAM**—A student works on a coding exercise in Washington’s Vancouver Public Schools. Some special education classrooms in the district’s elementary schools have integrated computer science over the past few years.

# COMPUTING INCLUSIVITY

responsive design—ensuring websites function well on various devices.

He and his educators are looking for other areas where these skills will give students a competitive technological advantage. “As we all become more and more dependent on screens that display information, the need for individuals with sharper and more defined visual and spatial skills is becoming more and more important,” he says.

Crasnow’s school introduces students to programming in kindergarten, using Scratch, a drag-and-drop coding language. Middle school curricula continues with Python, which introduces analytics. Programming leads to robotics, which has become a “critical” activity at the school because it teaches collaboration skills to students who tend to prefer working individually, he says.

Students teams develop robots that will perform a specific task, such as lifting and stacking boxes. One student designs the robot, while teammates focus on building and programming it.

“The three of them have to talk to each other—you can’t do the wiring without knowing the design and you can’t program without knowing what the robot’s going to do,” Crasnow says. “We live in an age of intense automation, and I want our students to be a part of that movement.”

## Desirable difficulties

When students with special needs become engrossed in computer science projects, it can have widespread benefits, says Leigh Ann DeLyser, executive director of CSforALL (csforall.org).

“We see students with disabilities having increased engagement in computer science classrooms, and we see them wanting to use better math and ELA skills to complete computer science projects,” says DeLyser, whose organization works in a consortium to promote more comprehensive computer science education.

She recommends that computer science instructors not be left out when teachers are implementing a student’s IEP

in various classrooms. “A lot of the time people think of computer science as an elective,” DeLyser says. “Treating it as a core discipline can make the accessibility barrier lower for students and teachers.”

Computer science teachers can start making accommodations by designing a curriculum that’s more carefully scaffolded for students of different learning

abilities. Key to this approach is making it clear to students that asking for help or clarity is not a sign of failure.

At the same time, teachers should resist the temptation to give special needs students the answers to questions when they’re struggling, DeLyser says.

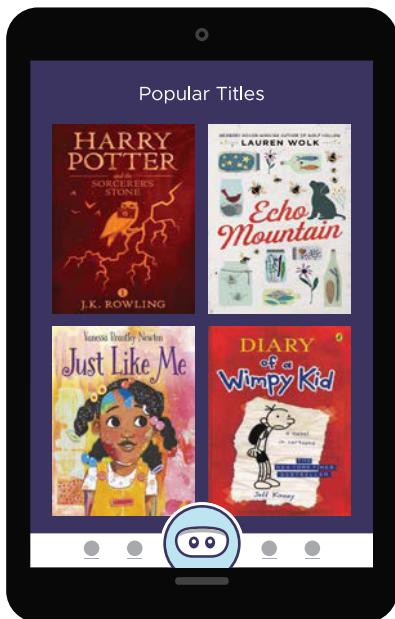
## 8 SMART PRACTICES FOR INCORPORATING COMPUTER SCIENCE INTO SPECIAL ED CLASSROOMS

1. Treat computer science as a core discipline, not an elective.
2. Ensure computer science teachers are involved in creating and modifying curriculum along with special ed teachers.
3. Provide PD on techniques for integrating computer science into special education.
4. Build computer science programs around special education students’ abilities, which can include enhanced visual and spatial skills.
5. Consider robotics for encouraging collaboration (which can be challenging for students who work better individually) and building social skills.
6. Design a scaffolded curriculum to support students who have different learning abilities.
7. Have educators make it clear to students that asking for help is not a sign of failure.
8. Remind teachers not to simply give the answers to a special needs student who is struggling.





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# COMPUTING INCLUSIVITY

For instance, the programs students use to debug software can sometimes give unclear reports and confusing answers. When this occurs, teachers should nudge students with special needs to figure out ways to decipher those reports, such as by doing an internet search. Then teachers should give students feedback on the process they used to find the solution.

“There’s a tendency to want to help students with disabilities leapfrog over obstacles,” DeLyser says. “But when they encounter difficulties and the challenge of solving the puzzle is part of the learning, building a step over an obstacle doesn’t necessarily benefit students.”

At Tompkins-Seneca-Tioga BOCES, a regional educational services agency based in Ithaca, New York, the special education computer science initiative began a few years ago with acquiring adaptive hardware and software.

Next came professional development in the CSforALL model and other techniques of integrating computer science into special education, says Jeffrey Matteson, the district’s superintendent/CEO.

The agency also revamped the library at the K-12 special education school it operates on campus. A makerspace, which serves as the hub for computer science instruction, now includes work with drones and virtual and augmented reality. “Computer science has the potential to make a young person fully able,” Matteson says. “It removes the identifier of a disability when a young person can create through computer science and in the virtual world.”

## No need for a screen

A multiyear coding pilot in a select group of elementary-level, special education

**LIFE SCIENCE—** Computer science at the STEM3 Academy in Los Angeles focuses on providing career skills and job pathways to students with special needs.



classrooms in Washington’s Vancouver Public Schools is now going off-line.

It’s not being phased out—teachers, rather, are “unplugging” by supplementing computer science instruction from Coding.org with hands-on activities that don’t require a screen, such as playing “zombie tag” with Sphero robots.

This work helps students develop fine motor skills as well as social skills such as having two-way conversations, taking turns and collaborating on game strategies, says Meagan Williams, the instructional technology facilitator and former special education classroom teacher who has been leading the pilot program.

“Students want those tactile opportunities and those sensory responses,” Williams says. “This gives them opportunities to do manipulative work in the real space in front of them, to take things a character is doing on a screen and figure out a way to make it lifesize.”

Teachers have used playing cards to show students how to decipher and

create patterns. Classes have also built mazes for an exercise in which students give verbal and nonverbal codes to help a classmate navigate to the end.

And within the curriculum currently being developed by Williams and her team, there’s a lesson where students will code the Sphero robot to paint patterns as the devices. “This gives them a chance to use the coding lang they know and have conversations with peers,” Williams says. “It’s giving them a bridge to get to general ed in a new way.”

One of the best outcomes of the pilot has come from the trial-and-error process of coding itself. Students are better able to overcome mistakes, and this increases self-confidence. “It’s helping students share their fears and anxieties openly,” Williams says. “They’re not becoming as frustrated—they’re saying they’re stuck and they’re helping each other.” **DA**

*Matt Zalaznick is senior writer of DA.*

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# Tackling TRAUMA

BY MATT ZALAZNICK

Students cope better with stress  
when they trust adults at school

A string of student suicides over the last few years forced leaders of the Nampa School District near Boise, Idaho, to revamp their approach to mental health care.

In a series of meetings with the community, administrators developed a better picture of all the traumas and tensions weighing on the minds of students: family financial difficulties, caring for siblings, academic pressure, sports and extracurricular demands, and the skewed picture of youth depicted on social media.

“We educate our kids—we give them clothing and food and dental and eye care—but we haven’t focused as closely on mental health and social needs,” Assistant Superintendent Gregg Russell says.

In adopting trauma-informed teaching practices, Nampa’s leaders discovered what their colleagues in other districts have also learned over the last few years: Students have a greater chance of coping with traumatic childhood experiences and succeeding in class when they can turn to a trusted adult at school.

It is, therefore, important that educators excel at building healthy, supportive relationships with young people. In that sense, classroom teaching must now incorporate elements of counseling, Russell adds.

“The old mentality of ‘I’m the teacher, I’m here to give students information and they’re here to receive it,’ doesn’t work anymore,” Russell says. “You need to let students know you care for them beyond the content you’re teaching, because when kids aren’t getting that kind of support



**SHARE:** [DAmag.me/trauma](https://damag.me/trauma)  
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**CRITICAL CONNECTIONS**—A therapy dog helps students in Idaho’s Nampa School District reduce stress. District leaders have also adopted extensive trauma-informed teaching practices to guide educators in building trusting relationships with students.



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# Tackling TRAUMA

from an adult, this world is a pretty lonely place.”

## How to use books, movies and songs

Building authentic relationships is the No. 1 strategy for helping students develop resilience against toxic stress, says Jaime Castellano, a professor who teaches classroom management and inclusion at Florida Atlantic University’s College of Education.

“You have to understand who your students are, where they come from, what traumas they have experienced and what might trigger inappropriate behavior,” says Castellano, who also works with K-12 students as a case manager at Mul-

tilingual Psychotherapy Centers, Inc., in Palm Beach County.

With his student teachers, he models several activities, such as what he calls “the cultural you.” Teachers can ask students to describe the sights, sounds and smells of home that paint a picture of their cultural backgrounds. In another exercise, students bring five items that help define their identities.

On the academic side, he recommends “bibliotherapy” and “cinematherapy,” in which teachers lead discussions after classes read books and watch movies that depict some of the challenges students are facing. “This shows them they are not alone, that there are others out there who

have overcome the traumas they’ve experienced,” he says.

Castellano also suggests that teachers ask students to share songs that give them hope and inspiration in overcoming challenges. Ultimately, it’s critical to create a safe school environment by sticking to classroom routines and setting clear expectations for students.

“Trauma and anxiety and depression transcend zip codes and income levels,” he says. “And for every kid we identify and who is getting help, there are probably two to three kids whom no one knows about.”

## Adding on-site mental health clinics

In adopting trauma-based teaching, Nampa School District leaders ran up against a troubling phenomenon, says Russell.

Even when students confided suicidal or despondent thoughts to a friend, those friends often felt they had to keep it secret rather than alerting a teacher, counselor or other adult. Even teachers might hesitate to pass on such information for fear of betraying a student’s trust, he adds.

Counselors trained in trauma-informed care treat students at mental health clinics based at seven of Nampa’s schools. These visits get documented to better assess the severity of a student’s mental state and track treatments when students switch schools within the district, Russell says.

In addition, administrators have created advisory periods in which educators meet regularly with every high school student to discuss what’s going on in their lives in and outside of school.

In the classroom, teachers this school year have focused on building students’ resilience with a range of resources, including the Second Step social-emotional learning curriculum and mindfulness apps such as Mind Yeti and Headspace. Some of these materials were purchased with a \$150,000 grant from the Blue Cross Foundation.

“We’re looking at this through a number of lenses,” says Shelley Bonds, the executive director of elementary education. “But we did see a decline from a year ago in the number of major behavioral incidents in the first nine weeks of school.”

## Elements of Trauma-Skilled Schools from the National Dropout Prevention Center

**2 YEARS**

Recommended  
timeframe for  
implementing at  
a school site

**3-5**

Number of  
trauma-trained  
faculty from  
NDPC who guide  
the process

### STEPS INVOLVED

1. Assessment of staff knowledge and perceptions of trauma through surveys and interviews
2. Introduction to rationale and expectations of the model for administrators and staff
3. Formation of 5-6-member lead team of staff to guide, monitor and support implementation over time
4. Professional development for all staff in the model’s three areas
5. Site-specific plan developed by lead team with facilitation from NDPC
6. Ongoing surveys of students and staff to measure changes in perceptions, practices, climate and success of implementation
7. Periodic site visits by NDPC faculty with the lead team
8. Designation of lead team members as certified Trauma-Skilled Specialists
9. Validation of school-wide implementation with award of Trauma-Skilled Schools Certification

### THE GOAL:

Equip all educators at a school to interact with and instruct students in ways that negate the behavioral and instructional influences of stress and trauma.

*Adapted from the “Executive Summary of the National Dropout Prevention Center Trauma-Skilled Schools Model,” [DAmag.me/ndpctr trauma](http://DAmag.me/ndpctr trauma)*



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# Tackling TRAUMA

## ‘What if I was good at math?’

Several administrators are working to make their buildings “trauma-skilled schools” through a professional development and curricular program developed by the nonprofit National Dropout Prevention Center.

In the process, some school leaders have found teachers hesitant to add “mental health counselor” to their job description, says Sandy Addis, the center’s director.

The goal of the program, however, is for all staff—from every teacher to every bus driver—to get a better understanding of how trauma impacts students’ behavior.

Take, for instance, a student who gets shut in a closet as punishment at home. That student will likely have an adverse reaction when brought into a similarly small office to be disciplined by a vice principal, Addis says.

The center’s PD guides teachers in building student confidence by letting kids make choices, such as picking their own seats or suggesting classroom rules at the beginning of the school year.

“Kids who have been traumatized often perceive that they’re not choice-makers in their own lives,” Addis says. “A lot of times in school we unconsciously don’t give kids choice when we could very easily do so.”

At the Renaissance School, an alternative program of the Bremerton School District in Washington, becoming a trauma-skilled school means helping students envision a successful future for themselves, Principal Kristen Morga says.

“Students have to see their goals as realistic and attainable in order to not give up,” Morga says. “We’re working to make sure that all of our interactions are transformational rather than transactional.”

Interactions—even seemingly insignificant ones—become transformational when teachers can build on students’ strengths, she says. For instance, when a student says “I can’t do this, I’m terrible at math,” a transformational teacher says



**SUPPORT SYSTEMS**—The Renaissance School, an alternative program in Bremerton, Washington, is a trauma-informed school where teachers encourage students to visualize success and focus on their strengths.

“What if you could do? What if you were good at math?” Morga says.

“Even if they don’t respond in the moment, it puts it into the kid’s brain,” she says. “They can continue to think,

‘What if I was good at math?’ It opens up a lot of possibilities.” **DA**

*Matt Zalaznick is senior writer of DA.*

## Trauma means teachers must care for themselves, too



Staff wellness and empowerment constitute key elements of providing trauma-informed support to students in St. Louis Public Schools, says Megan Marietta, the district’s director of social work.

“If we have healthy staff who are able to build healthy relationships with students and families, we are going to see better outcomes for our kids,” Marietta says. “If there are approaches that are going to benefit students, they are just as likely to benefit staff.”

Eleven St. Louis elementary schools are piloting PD that guides teachers in adding mindfulness and other self-care techniques into their daily routines. In a few buildings, educators visit classrooms with a coffee break cart. Teachers are encouraged to have a coffee

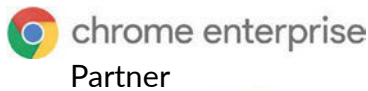
or a pastry and take a 10-minute break to refresh while one of the educators covers their classrooms. Some schools also have created wellness committees to schedule time for teachers to have short counseling sessions with school mental health clinicians.

And school “regulation rooms” that have been created to provide a place for students to calm themselves have now been opened to teachers who need some quiet time.

An overall goal of these initiatives is to destigmatize the concept of teachers asking for a little assistance. Getting in a better mindset allows teachers to work more closely with families, to take new approaches to discipline and to create more equitable environments in supporting students who are coping with stress, Marietta says.

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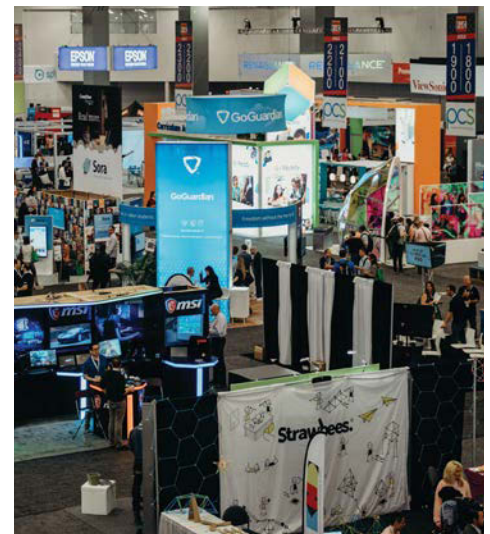


# FETC 2020



The 40th anniversary Future of Education Technology® Conference brought a crowd of 9,000 to Miami Beach in mid-January for four jam-packed days of keynotes, workshops and sessions as well as special events ranging from hands-on activities on the expo floor to awards presentations and school field trips. Five session tracks—including new ones for coaches and for library media specialists—allowed like-minded attendees to learn and network together.

Save the date for 2021, when FETC® returns to Orlando, January 26-29.



**EXPO HALL EXCITEMENT**—Attendees got the chance to have a wide variety of interactive experiences on the huge show floor. Options included individual booth demos such as trying out a flight simulator (top right) and sandbox activities such as learning to use Merge Cubes (bottom left).



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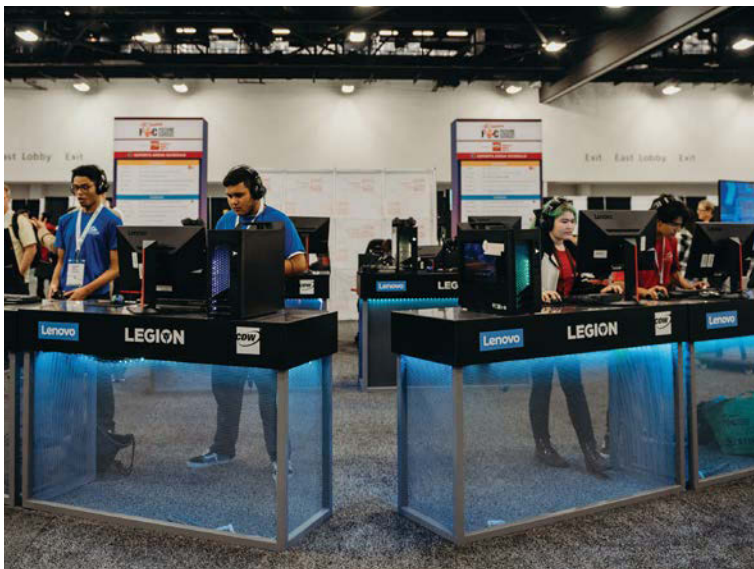
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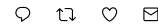
**TASTE OF THE LATEST TECH**— Taking a seat at the Trailblazer Theater (top), attendees heard presentations about school district innovations. And at the popular eSports Arena, the action included how-to presentations and even some time for free play.



Andrew Arevalo  
@Gameboydrew

When I was done with my workshop, I had an individual approach me. "If seeing this was the only meaningful thing I'm exposed to this week, I'd be happy!" . . . I put a lot of time into every single session I give. So yeah, hearing feedback like that feels great. #FETC

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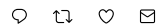
4:49 PM · Jan 14, 2020



Charlie Hinsch  
@cwhinsch

It is so awesome attending a national conference with so many instructional leaders. Hold on to your seats @vbschools as we will be returning with a tidal wave of new knowledge fresh from #FETC to help transform learning in your classrooms & across the division! #VBFETC #vbits

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5:21 PM · Jan 16, 2020



Alexandra Laing  
@LaingAlexandra

How much of what we do in our schools is because it's what is best for kids & how much of it is done because it's just always been that way? Change is always uncomfortable, but innovation doesn't happen without it. Time to rethink "normal"?? #FETC @DanielPink

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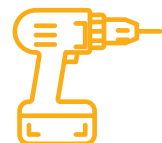
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**GETTING RIGHT TO WORK**—One of two full-day pre-conference summits included an event for library media specialists on maximizing collaboration and technology.

**FETC**

Glen Irvin Flores  
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“In schools, there’s always been a space for the football player. There’s always been a space for the track team. There’s never been a space for the gamer. And now there is.”  
@misterwashburn #FETC2020 #FETC  
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8:28 AM · Jan 17, 2020



**IN THE PINK**—In his keynote address on “Leadership, Innovation and the Surprising Truth of Human Motivation,” bestselling author Daniel Pink challenged the audience to be more intentional about the “when” of school—with what’s best for learning as the top priority, rather than convenience or logistics.

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**INSPIRED TO ACT**—Justin Shaifer’s keynote (top right) encouraged educators to embrace tools and approaches that connect with Gen Z students. During presentations and roundtable sessions throughout the conference, attendees heard about and discussed hot tech topics such as using AR/VR and digital tools, introducing and expanding blended learning initiatives, teaching computer science and coding, and being an effective technology leader. **DA**







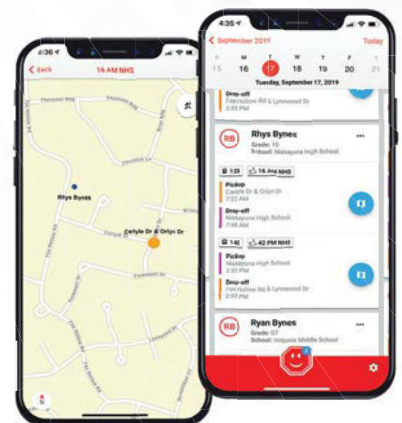


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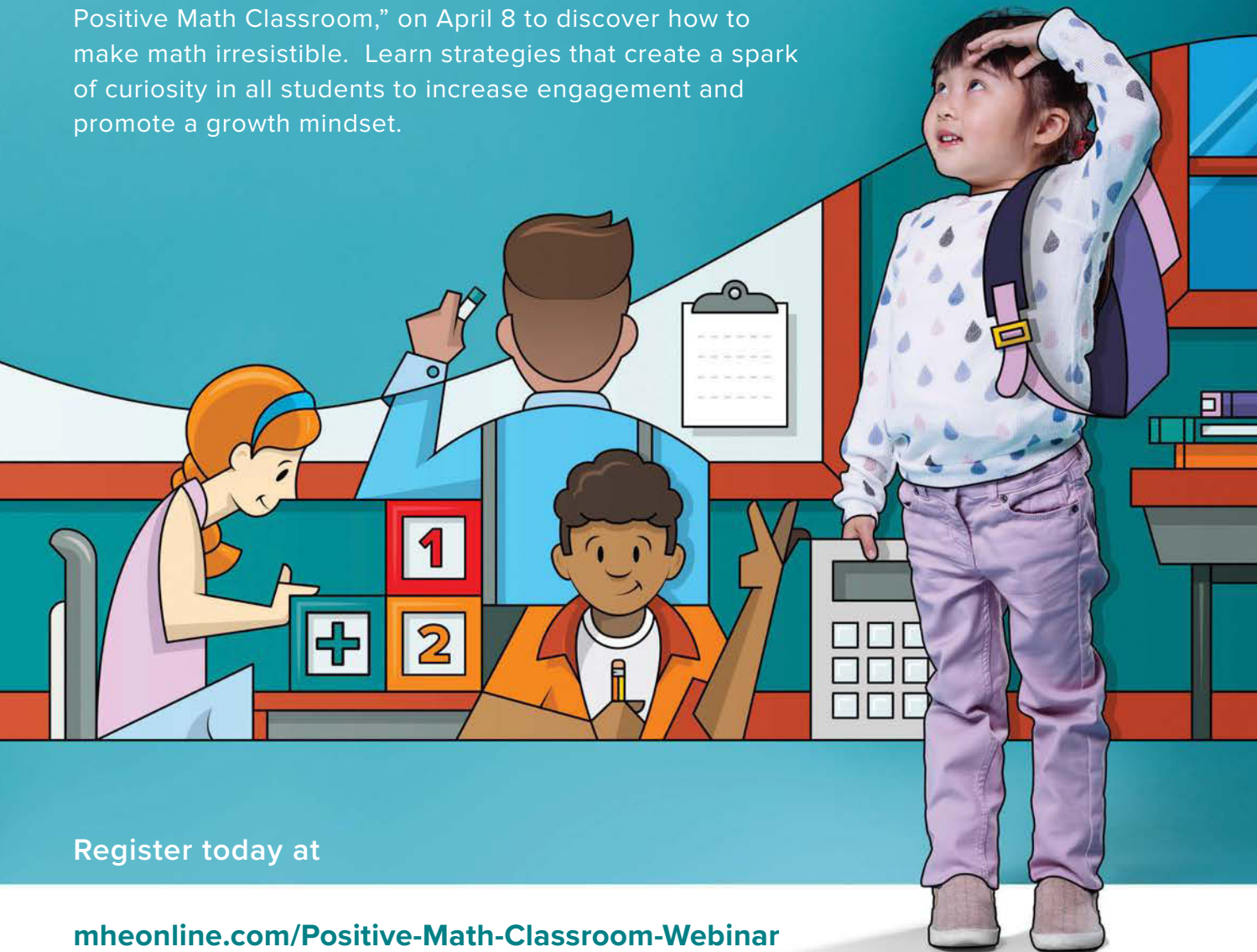


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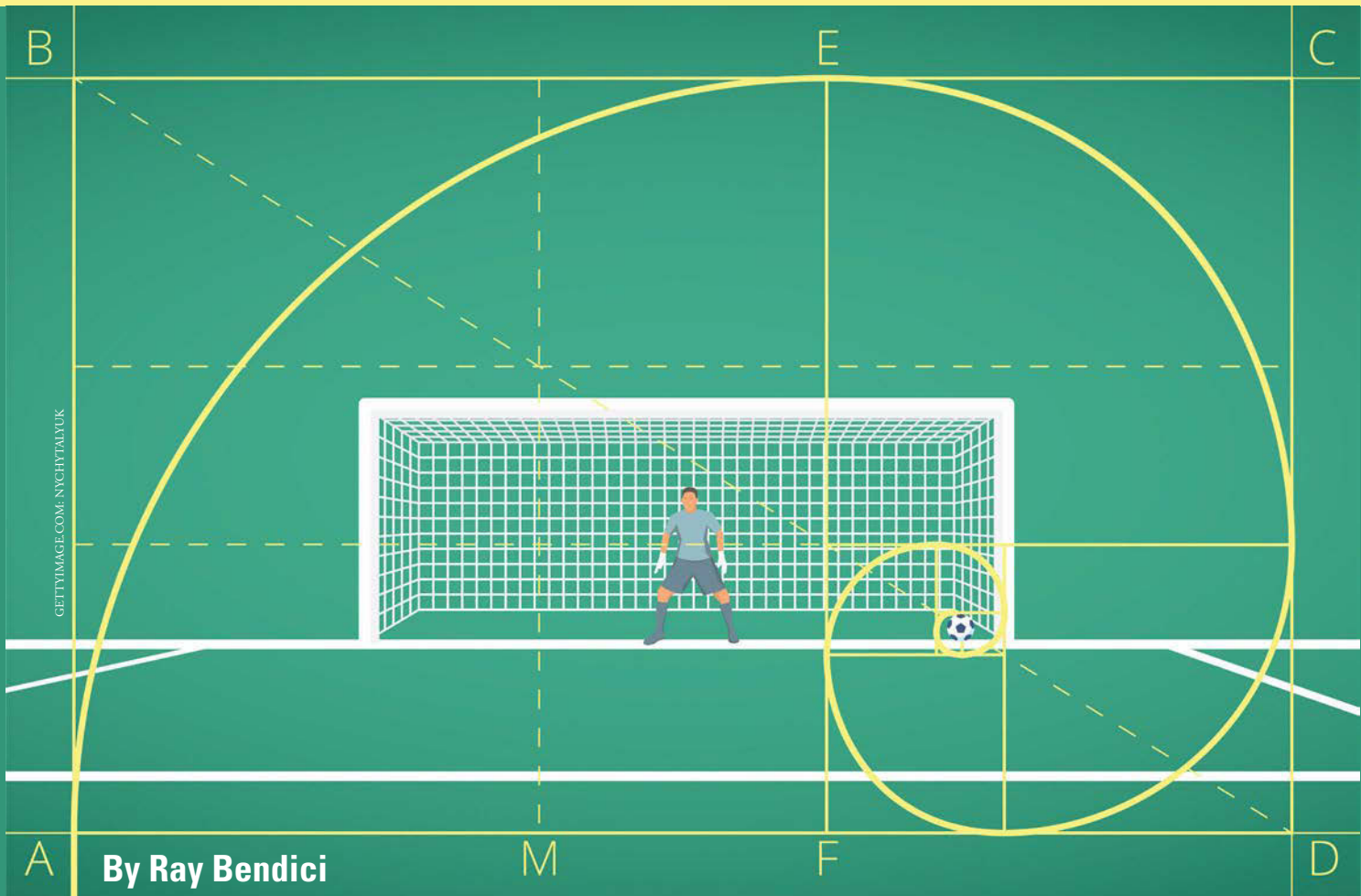


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# REAL MATH

Providing real-world context for mathematics with relevant examples and hands-on projects improves retention and learning outcomes



By Ray Bendici

**E**ducators increasingly have been bringing real-world math situations and examples into the classroom to help students contextualize the subject and improve understanding.

Rather than traditional instruction methods—which often involve simply presenting concepts and skills and rote memorization—math educators are adopting new approaches to better connect with students and demonstrate how the subject can be used in their own lives, says Mary Swack, supervisor of secondary mathemat-

ics for Carroll County Public Schools in Maryland. “Application-based mathematics is really the world we live in and it shows stuff that students can relate to.”

For example, the curricula in Carroll County feature multistep real-world tasks as unit starters. Students are presented with a relevant problem, such as how coaches may divide players between varsity and junior varsity teams or how wildlife experts might use ratios to protect endangered creatures, and try to solve it as best they can. Teachers lead students in notice-wonder discussions, asking questions such as “What do you notice about this?” and “What do you wonder about this?”

Students then engage in a “productive struggle” period in which they wrestle with the problem on their own before receiving formal instruction. Finally, they share reflections on their efforts and receive feedback. The student-led, teacher-guided process is repeated until the problem is finally solved.

“When you have an authentic application, it promotes student collaboration and draws upon the student’s backgrounds and experiences,” says Swack.

Educators at other school districts across the country are also increasingly using real-world scenarios and situations to contextualize mathematics.



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# REAL MATH

## Math projects inside and outside the classroom

At High Hills Elementary School on Shaw Air Force Base in South Carolina, fifth-grade students recently undertook a project in which they used math (in addition to science, English and social studies) to design food trucks. Students created math models and built their multiplication skills by figuring out the finances involved with running the business—from buying food supplies to calculating vehicle maintenance and repair costs.

In the Los Angeles High School for the Arts, ninth-grade students address practical math through studying financial literacy. Budgeting personal expenses, managing credit cards and paying bills all focus on basic math skills, while exercises such as calculating costs involved with launching a business provide additional learning opportunities.

Some districts have even taken stu-

dents out of the classroom to provide practical math learning experiences.

For example, high school students in Colorado can take “Geometry in Construction,” a class in which they work with Habitat for Humanity of Metro Denver to help construct homes. In addition to learning how to use power tools, students from 17 schools improve their geometry skills through use in hands-on construction—and in the process, also help those in need.

## Project and lesson design

One of the challenges in a real-world approach to mathematics is coming up with novel tasks or problems that engage students in the mathematical process and also other content areas, says Robert Berry, president of the National Council of Teachers of Mathematics and a former middle school math teacher.

“A classic example from four or five years ago that we used to use is ‘the cell

phone problem,’ in which students had to look at the relationship between minutes and cost,” says Berry, also currently the Samuel Braley Gray Professor of Mathematics Education at the University of Virginia. “Well, that’s not relevant because not too many people purchase minutes any more.”

In finding examples and projects, the mathematics have to be grade-level appropriate, reminds Berry.

“A task might require multiple entry points, so there’s no one right way to enter,” he says. “And that means there may also be multiple solution pathways.”

It’s also important to avoid problem duplication, says Swack. If the same kinds of problems are presented repeatedly, students will try to apply the same strategies to every assignment.

Another challenge is handling the pedagogical shift, says Swack. Many educators learned through the traditional model in which the teacher would present the skill first and then the student would have to apply it to a problem. They are inclined, then, to teach that way themselves.

“The real-world approach flips that upside down and says, ‘Let’s start with the rich problem, see what we know and what we need to figure out, and then along the way, I’ll introduce skills that will help guide you to a solution,’” says Swack. “It forces students to make connections and think mathematically.”

Ultimately, providing real-world context helps dismiss the stigmas involved with learning math.

“Nobody walks around saying they can’t read, but it’s very typical for students—and parents—to say, ‘Well, I’m not very good at math,’” says Swack. “The real-world approach boosts confidence and eliminates that idea that there’s a ceiling in learning math. We can always learn more math.” **DA**

## REAL-WORLD math practices for teachers: 3 APPROACHES

### 1 Lesson modeling during in-service days

Math teachers get divided into groups and are given problems to solve, with a facilitator modeling the classroom approach of asking guided questions to help the groups figure out their answers.



### 2 Peer observations

Teachers visit the classrooms of other educators who have had success with new pedagogical processes and observe their approach.



### 3 Co-teaching opportunities

Math teachers co-teach with those in other subject areas (e.g., geometry teacher co-teaches welding to demonstrate the importance of math in the welding process).



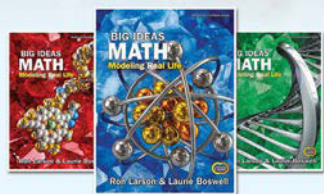
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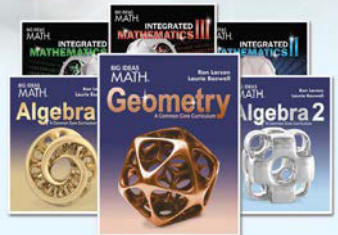
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**Justin Shaifer, founder and executive director, Fascinate Inc.**

*Growing up in a single-parent home on the South Side of Chicago, Justin J. Shaifer had little awareness of the potential of a STEM career. His worldview drastically transformed after experiences at Hampton University in Virginia. Shaifer graduated with a bachelor's degree in marine and environmental science, with the highest departmental GPA; was president of the student body; and received scholarships from NASA and the National Oceanic and Atmospheric Administration that covered 100 percent of his college costs. Now 25, he travels the country empowering young students to "embrace their inner nerd" despite their surroundings, and developing culturally responsive STEM curriculum for New York City institutions.*

*The energetic and engaging Shaifer presented the FETC® 2020 closing keynote, "Bring STEM to Class: A Practical Guide for Education," and then took the time to chat with DA.*

## Beyond the keynote: Insights from 'Mr. Fascinate'

**Justin Shaifer discusses engaging Gen Z in STEM, motivating educators and improving equity in STEM**

### **What's the biggest STEM-related message you have for educators?**

A lot of people think of STEM as a series of jobs that are going to prepare people for the modern workforce, or a couple of lessons that you need to learn in the classroom. The way I approach and engage kids who are from underestimated backgrounds is by helping them view STEM as a tool—rather than just information that you're getting beat over the head with. They can use it to empower themselves and solve problems in their communities.

### **How can educators better address equity within STEM?**

Kids from underestimated backgrounds tend to not see themselves in STEM because they don't see anyone who looks like them in these kinds of career paths. So it's really important to put those role models in front of them. There are hashtags like #STEMdiversity or #blackSTEMexcellence, and places where you can find people from the backgrounds of the students whom you're working with. It's a priority to show kids "Here's this person who looks like you" or "Here's this person who is from where you're from" who is doing this, and it's possible.

### **Tell us about Fascinate and your vision for it.**

We do all sorts of fun pop-up STEM events for kids in the New York City area. We simulate that Magic Cool Bus experience for kids. We have taught kids how to race drones and they're learning how to use drones in the process, and 3D printing where they're creating their own badges. We're conflating things they think are cool with STEM—like we do science rap competitions and we'll also do Minecraft or do Xbox—and then they'll learn on the backside how to create some of these things they tend to consume already.

Educators expect students to pursue STEM degrees without showing them the fun side of what's possible in STEM. I'd like Fascinate to become the ESPN of STEM, to provide that glamorized version of what this can actually become if they apply themselves. So it's giving these students those role models and hopefully trickling down into intrinsic motivation for the next generation of students.

### **What do you see in the future for STEM education and Gen Z?**

I'm really optimistic about how inspired this generation is going to be about pursuing these STEM careers. They're going to figure it out. But we have a lot of work to do in education in designing environments that are similar to work environments. The stuff I was working on in my tech job—I did none of that stuff while in the classroom. This gap is broadening as the STEM workforce is taking off and becoming more and more advanced; it's completely leaving behind the stagnant classroom model. So we have to constantly think about developing our students with that in mind. **DA**

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## Why we should monitor students online

Using technology to identify potential threats early is an important part of a school safety plan

By Cody Walker

Student safety is one of the biggest concerns for K-12 administrators, and there are multiple ways to address it. One is by hardening buildings through facility upgrades, such as installing bullet-proof glass and metal detectors. Another is through less-visible preventative measures, including mental health services and social-emotional learning programs.

New technologies can also help administrators keep an eye on students' online activities so they can identify potential threats or safety concerns early. As more districts offer laptops, Chromebooks and other devices for students to use in the classroom, it's becoming even more important to monitor how students are using those devices.

### Early detection

When an act of violence occurs, an attacker often leaves a digital trail that, had it been detected sooner, could have potentially helped teachers, parents and administrators intervene. For instance, the person may have been posting hostile comments on social media or in an online forum. Or the person's search history may have contained clues that foreshadowed an incident.

The same concept applies for other types of student safety concerns. If a

### Programs and software can help administrators monitor students' use of district-owned devices.

student is being bullied, has an eating disorder, or is having suicidal thoughts, there is often digital evidence. The good news is that technology directors, teachers and administrators can be proactive in detecting these warning signs by adopting monitoring technology.

Programs and software are available to help monitor students' use of devices while on the school network. This includes monitoring what students are searching for on the internet, as well as the emails or instant messages they send to classmates.

The technology can serve as a preventative and investigative tool. For example, at West Rusk County Consolidated ISD in Texas, software has provided us with information on several occasions that led to investigations. In one case, a student was going online during school hours to facilitate drug deals. We were able to use the software to pull records of online activity, and we could view a time-stamped screenshot of online interactions to confirm the activities took place during school hours.

In another instance, we received alerts through the software that indicated cyberbullying. Several students

were anonymously bullying another student in an online forum. The early detection allowed us to be proactive about identifying and dealing with the situation.

### Implementation strategies

For district leaders considering monitoring technology as part of their plans to support school safety, here are four actions to consider.

1. Make sure there is a way for students to anonymously report concerns online.
2. Offer digital citizenship lessons to teach students how to use technology in a safe, appropriate manner. This is key in a 1-to-1 environment.
3. Hold information nights for families and send home materials with students explaining what monitoring technology is and how it will be used. This encourages students to be good digital citizens and also alleviates concerns of parents. Address how the school handles student data and privacy issues.
4. Implement cross-platform monitoring software. This provides flexibility if students use different device types.

Monitoring software can allow administrators to be proactive about preventing or addressing concerning behavior before it gets out of hand. It can also help them, or law enforcement, find evidence they need to investigate a potential threat. It is an important addition to any school safety plan. **DA**

*Cody Walker is the technology director for West Rusk County Consolidated ISD in Texas.*



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## Climate change ed: Are your teachers prepared?

Educators require greater support to accurately and effectively teach climate science

By Glenn Branch and Lin Andrews

**W**ith millions of students leaving schools to demand action on climate change, as they did worldwide last fall, district administrators are increasingly faced with the challenge of including climate change in curriculum and instruction.

In 2005, only 15 sets of state science standards called for students to learn about the human causes of climate change. Today, anthropogenic climate change is explicitly recognized in the science standards of 36 states (plus the District of Columbia), including the Next Generation Science Standards.

But it is one thing for a state to recognize the need for students to learn about anthropogenic climate change, and quite another for teachers to ensure that need is met. And to help them, administrators need to be aware of what kind of support they require.

### What is the teacher experience?

Science teachers are not prepared to teach climate science effectively, according to a national survey of 1,500 public middle and high school science teachers conducted by the National Center for Science Education (NCSE) and researchers at Penn State during the 2014-15 academic year.

In particular, more than half of the teachers surveyed reported not having

**It is one thing for a state to recognize the need, and quite another for teachers to ensure that need is met.**

received any formal instruction on climate change as pre-service teachers. More than seven out of 10 reported never having received any continuing education on climate change as in-service teachers.

Only 54% reported presenting the scientific consensus of anthropogenic climate change as such, while 41% reported emphasizing the scientifically unwarranted idea that natural causes are responsible for global warming.

### Bolstering pre- and in-service ed

To help change this, administrators should make it clear to local colleges and universities that pre-service science teachers need to be prepared. And even though funds are always tight, they should prioritize professional development on climate science.

Ideally, such preparation will equip teachers with not only content knowledge but also pedagogical know-how to teach climate change effectively.

Social controversy is a possibility. In the NCSE and Penn State survey, fewer than one in 20 teachers reported encountering overt pressure not to teach climate change. But as climate change becomes more prevalent, such pressure will likely increase.

### How to address the critics

Teachers who are prepared to teach climate change will be prepared to resist pressure. But administrators should also be ready to support teachers if there is a community backlash.

Central to any backlash will be the misconception that anthropogenic climate change is scientifically controversial. But upward of 97% of climate scientists agree that human activity is causing global warming, as independent studies using different methods have consistently found.

As a result, the National Science Teaching Association noted in a 2018 position statement that “decades of research and overwhelming scientific consensus indicate with increasing certainty that Earth’s climate is changing, largely due to human-induced increases in the concentration of heat-absorbing gases.”

In teaching about anthropogenic climate change, science teachers are in line with the consensus of the scientific community and the recommendations of their professional organization as well as with the state science standards.

There is widespread support—77%, according to a recent survey—among the American public for teaching about climate change in public schools. Administrators can rise to the challenge by ensuring that their science teachers are ready, willing and able to do so when climate strikers return to their classrooms. **DA**

*Glenn Branch and Lin Andrews are deputy director and director of teacher support, respectively, of NCSE.*



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## Telling your school's story through video

It has never been easier to create—and share—rich digital content

By Rushton Hurley

**W**hat is going on at your school that is so amazing that you wouldn't want any child, anywhere, to be deprived of the experience? In a school of excellence, there will likely be several activities, programs or learning moments that fit.

Thinking about excellent programs in the context of how to describe them to the community is not simply good public relations. It's also an opportunity to figure out how members of your team can work together to make what they do all the more powerful for their students—even as they build their ability to collaborate effectively.

### Connecting with the community

The Easterbrook Discovery School in San Jose, California, has offered a program designed to increase the participation of fathers in their children's schooling. "Dads and Dudes on Duty" brings together students and their dads and special dudes (uncles, grandfathers or other male role models who are close family friends) for a morning of learning.

It has served not only as a strong program, but also as a strong story. You can view a short (three-minute) video to see how school leaders have shared the program with their community ([DAmag.me/dad](https://DAmag.me/dad)).



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**You do not need to include every detail in your school video; instead, leave your audience wanting to learn more.**

Video, especially short video, is a medium that lends itself to sharing. If you see something cool about a local school, wouldn't you want to share it? In Easterbrook's case, the video has been viewed over a thousand times, and the reason is because it's a story that touches the heart.

Note that in it, you hear from dads and dudes, and you hear students' voices, too. You see in their faces the fun they are having. You hear one dad say, "This makes me want to come even more often." That's a win.

### Getting started

It has never been easier to make a video. There are free tools that allow the quick combination of images, clips and voice. The PR representative at Franklin Community Schools in Indiana has used Adobe Spark, for example, to share "The Franklin Minute" on Friday afternoons, telling about the great moments from the week in the district's schools.

Leaders can encourage their teachers to work together to gather visuals that can be used in simple videos, to talk through the stories that the com-

munity will want to hear, and to record their students' voices telling what they feel about their experiences.

Some will worry about privacy, but there is no need to have students' faces on video. Show their work; their voices can be used in narrations.

Finally, focus on keeping the story short. Three minutes is better than five, and one is better than three. The shorter it is, the easier it will be to emphasize the most compelling parts of the story. You do not need to include every detail; instead, leave your audience wanting to learn more.

### Learning together

Gather several leaders and teachers together to try using whatever tools you have available. Learning together will spark more ideas about ways to make good activities even stronger. You'll also learn from each experience making a video. A quick search on YouTube for the name of the tool you have—plus the magic word, "tutorial"—will give you what you need to get started.

And don't wait until you think a video is perfect to share it. Ask families what they think and what other stories they want told. Getting them involved in highlighting your school's strengths will open new doors for supportive individuals and organizations to help you create your next success story. **DA**

*Rushton Hurley is the founder and executive director of Next Vista for Learning, an educational nonprofit that houses a free library of videos by and for teachers and students at [NextVista.org](https://NextVista.org).*





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