JANUARY 2020

EMPOWERED LEARNER

A PUBLICATION OF THE INTERNATIONAL SOCIETY FOR TECHNOLOGY IN EDUCATION

THE FIVE PILLARS OF EDTECH PROCUREMENT

AS EDUCATORS RETHINK HOW THEY MAKE TECHNOLOGY DECISIONS, THESE ARE THE CRITICAL FACTORS TO CONSIDER

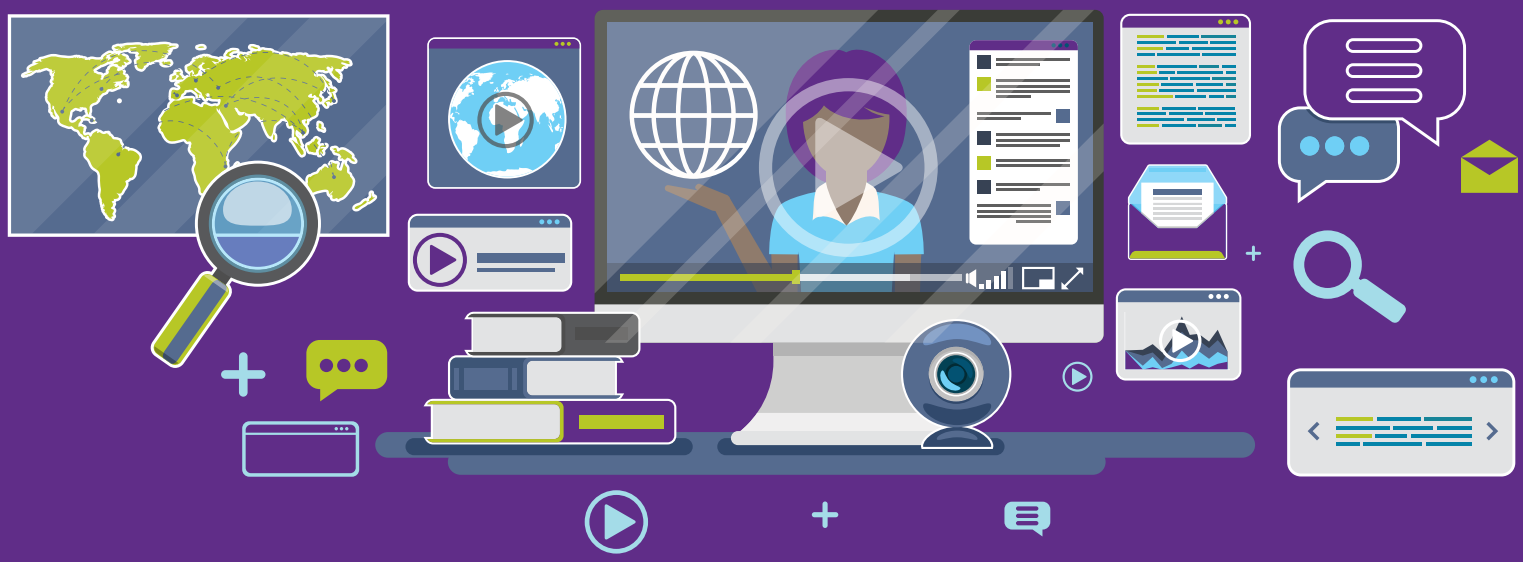
+

FROM DISCORD TO CIVIL DISCOURSE

INCLUDING THE HUMAN ASPECTS OF DIGITAL CITIZENSHIP CAN LEAD TO CULTURAL SHIFTS

STANDARDS SPOTLIGHT

USING THE ISTE STANDARDS TO GUIDE SYSTEM-LEVEL DECISIONS



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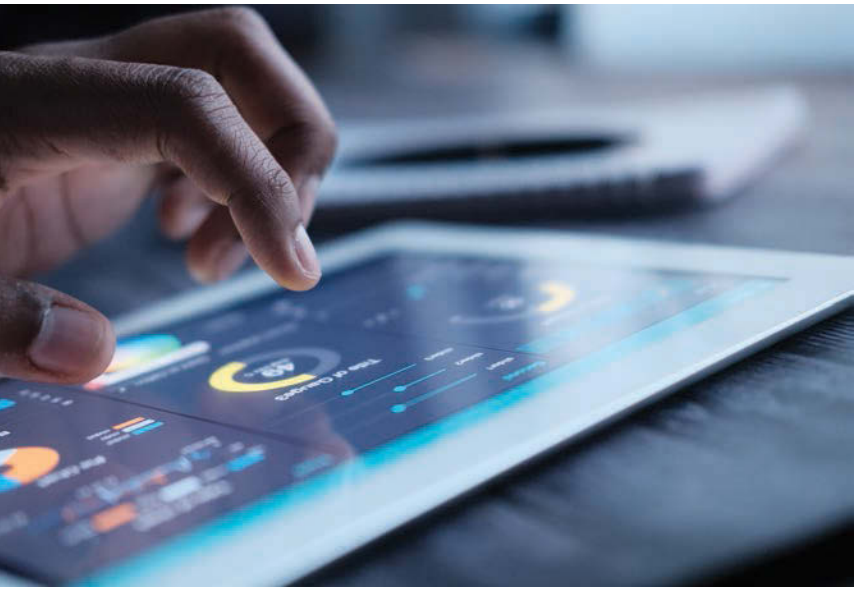

EMPOWERED LEARNER

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The International Society for Technology in Education (ISTE) is a nonprofit organization that works with the global education community to accelerate the use of technology to solve tough problems and inspire innovation. Our worldwide network believes in the potential technology holds to transform teaching and learning.

ISTE sets a bold vision for education transformation through the ISTE Standards, a framework for students, educators, administrators, coaches and computer science educators to rethink education and create innovative learning environments. ISTE hosts the annual ISTE Conference & Expo, one of the world's most influential edtech events. The organization's professional learning offerings include online courses, professional networks, year-round academies, peer-reviewed journals and other publications. ISTE is also the leading publisher of books focused on technology in education. For more information or to become an ISTE member, visit iste.org. Subscribe to ISTE's YouTube channel and connect with ISTE on Twitter, Facebook and LinkedIn.

Our vision. ISTE's vision is that all educators are empowered to harness technology to accelerate innovation in teaching and learning, and inspire learners to reach their greatest potential.

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PHOTO BY STEVE SMITH

Bill Bass shares three ways educators can lead, support student success with the ISTE Standards for Educators.

How all educators can embrace their roles as leaders

By Bill Bass
President, ISTE Board of Directors

When the ISTE Standards for Educators were updated recently, one of the additions I was most excited about was that of "Leader." Our educational systems need leaders who will help bring change to our classrooms and create authentic, meaningful learning experiences for our students.

Here are three things – based on the Educator Standards indicators – that every educator can do to be a leader in ensuring student success.

1. Shape, advance and accelerate a shared vision. Every teacher has the opportunity to accelerate change and influence decision-making. Mentor colleagues, join committees, advocate for effective use of technology to support learning with parents, colleagues and school leaders. You can even voice your opinions about education policy to national, state, school or city leaders. Make sure you connect with education stakeholders locally and around the globe by attending conferences and engaging online with your professional learning network (PLN).

2. Advance equitable access and learning opportunities to meet the needs of diverse learners. You can be vigilant about ensuring that all students have access to high-quality learning aided by technology and culturally relevant curriculum regardless of socioeconomic status, geographic location, ability, language or any other factor. You can do this in many ways, such as using videoconference technology to bring an expert into the classroom if your school is in a remote area, leveraging acessibility tools to support students with physical disabilities, and giving competency based assessments and supporting individual students where they are.

3. Model digital resources and tools for learning. Find new strategies and tools for learning by reaching out to other educators face-to-face or on Twitter, reading research on the learning sciences or subscribing to blogs by thought leaders. Don't be afraid to experiment with new tools for learning and be open to risk-taking and productive failure for continuous improvement. Reflecting on what went well and what didn't offers valuable insight for making improvements for next time.

As educators, we're all leaders. But leadership comes in many forms and takes many paths. While there's no one right way to approach this work, it's critical to recognize that leading, like teaching, is about relationships. It's about understanding and influence, and it's about finding common ground, staying humble and compromising.

Ultimately, it's about lifting up the work of others, advocating for students, and modeling and shaping the instructional practices that we see in our schools. We know that it's only through the leadership we find in our schools that we can make inroads in bringing innovation and meaningful learning to our students.

PHOTO BY EDEN HANSEN

Let's link arms to pursue, realize true transformation

By Rhonda Ford
ISTE Chief Membership and Partnership Officer

"We who believe in freedom cannot rest until it comes." – *from "Ella's Song" by Bernice Johnson Reagan, Sweet Honey in the Rock*

As ISTE begins its fifth decade, I've been reflecting on our journey, impact and the path ahead. From reaching tens of thousands of educators around the world each year to the broader and exponential impact of your learning, leadership and innovation with and for students, there's much to celebrate. And, as the adage goes, we've come a long way, yet we have a long way to go.

It's not enough for us to rest on our successes and progress. Collectively, we're pursuing something greater. Whether you define "freedom" as an excellent education, student and community access to emerging technologies, best-in class professional development, equity for all learners, next-level digital citizenship or something else, we can't rest until it comes.

As I'm getting to know the ISTE community, one thing is certain. We don't fit the "rest-on-our-laurels" mold! From transformational learning experiences to countless hours of collaboration and peer-led volunteering alongside the work you do everyday, this community is powerful, active and walking the talk of our mission to transform teaching and learning, accelerate innovation and solve tough problems in education. It's incredible to bear witness to our impact.

But we can't achieve our mission alone. Within and beyond our community, we need to link arms to pursue and realize transformation together.

You may be thinking, this sounds good in theory, but what does "linking arms" actually mean in practice? Here are a few starting points.

- Boldly own your role as a change-maker. If you're reading this article, you're far from mediocre. You're a prime mover, early adopter, influencer and active leader. You're doing the work of transforming education, day in and day out, and often in the unseen moments. If you haven't heard it lately, thank you! Thank you for being a change-maker and being a part of the ISTE community. We're glad you're here, and we're eager to engage with you more deeply.

- Speaking of deeper engagement, take a step to connect with our community in a new and meaningful way. Join an ISTE professional learning network (PLN), volunteer at an ISTE event or connect on social media. Consider mentoring fellow educators or pitching an at-scale idea. We're eager to elevate and fuel leadership and collaboration within and beyond the community.

- Share community connections, promising practices and partnership opportunities. In the past few years alone, more than 500,000 leaders have engaged with ISTE through learning experiences, products, services and professional development, but we're only in deep community with a small fraction of that group. Let's work together to change that.

On the staff side, I'm thrilled to lead the membership and partnership team in our mission to engage and collaborate with the broader education community, but we need your help to make this happen. Connect with me using @rhondadford on Twitter. Make an introduction. Share some feedback. And, most importantly, stay with us in pursuit of our mission – and freedom.

PHOTO BY STEVE SMITH

3 ways districts can support learning with meaningful tech use

By Matt Hiefield

As disparities in technology and connectivity continue to shrink in U.S. schools, another significant edtech divide is opening up related to opportunities for all students to experience meaningful instruction. One cause of this "opportunity gap" is the lack of adequate teacher professional development.

When new devices gather dust in the back of a classroom because a teacher isn't sure how to use them effectively, the investment in devices – as well as buy-in from stakeholders and the potential for student learning – is squandered.

Even in classrooms where students regularly have access to technology, if students aren't using those devices to enhance learning in meaningful ways, the tools become nothing more than a substitute for chalkboards and pencils.

Figuring out how to support all teachers regardless of budget constraints – and not just applaud the few great examples of tech use within a district – is critical to providing high-quality, relevant education for all students and preparing them for the jobs of today and tomorrow.

Students deserve directed, collaborative and engaging experiences with technology, and high-quality PD can help teachers integrate tech in meaningful ways.

Here are three ways districts can support educators:

1. Make equity the framework

Too often, schools acquire a cool new innovation and the central question is, "How can we use this in a classroom setting?" Although a new platform or strategy can be engaging, we must focus on whether it provides meaningful experiences for all learners. Does it make provisions for second language learners or students with disabilities or other barriers that may impact learning?

During PD sessions, be intentional about addressing equity and the commitment to give all students the same opportunities to learn.

PD should integrate five central equity ideas:

Building relationships: Create and maintain a brave, warm, welcoming and collaborative learning space grounded in relationships.

Establishing the why: Use explicit language to articulate the why of PD and its connection to eliminating access, opportunity and expectation gaps.

Valuing cultural capital: Elevate your learners' personal, social, emotional, familial, linguistic and navigational expertise, and their impact on teaching and learning.

Assessing learning: Ask "Where do I go from here?" to assess the impact of your learning.

Practicing self-reflection: Examine personal values, beliefs and assumptions and their impact on teaching and learning.

2. Align PD content to the ISTE Standards

Whether you're sharing a lesson, strategy or tool, make sure the content you're presenting addresses the ISTE Standards. Using this framework will ensure that all teachers are on the same page about how to use technology to create meaningful learning experiences.

For example, the ISTE Student Standards direct students to work with peers, experts and community members to examine problems from different viewpoints. So if you're presenting about a collaboration tool – be it Google Docs or Seesaw – find ways to incorporate the elements of the Global Collaboration standard.

Cultural relevance is also important. When presenting about a game, app or lesson plan, make sure the content is inclusive and appropriate for all students. Blogger Sarah Gross shared a cautionary tale (bit.ly/2kqsZ4a) of a widely shared lesson that "gamified the oppression of the indigenous people who already lived on that land."

3. Evaluate and plan for the future

In many districts, evaluating the efficacy of PD is often an afterthought – if it happens at all. Evaluations should be standard practice at the end of every PD session, and responses (usually a Google form) should be read, acted upon and stored in an accessible folder as a guidepost for future sessions.

If PD focuses on a tech tool that the district has purchased, it should be routine practice to run reports on the use of that tool in the months following the PD to determine its effectiveness. Several years ago, I spent an hour learning about a video library tool with 20-30 teachers. When we were asked about the tool months later, it was apparent no one had used it.

Conversely, last year we analyzed Seesaw and Dreambox data to see if site-based PD had increased use. As it turned out, gathering this data and checking back with teachers led to more thoughtful integration.

PD hours should focus on equity, structures, intentionality, collaboration and evaluation to ensure a connection to meaningful and inclusive instruction. It shouldn't be an afterthought that's planned a few days before a designated PD day.

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"Students deserve directed, collaborative and engaging experiences with technology, and high-quality PD can help teachers integrate tech in meaningful ways."

INTERVIEW

Marina Umaschi Bers, Ph.D., shares how CS, CT and coding lessons fit into early childhood education.

MARINA UMASCHI BERS, Ph.D.

PROFESSOR, AUTHOR, CREATOR WEIGHS IN ON TECH-RELATED TOPICS FOR EARLY LEARNERS

By Julie Phillips Randles

It's not every day that a book focused on preschool and kindergarten children dives into ways to teach them to be producers rather than mere consumers of technology. But Marina Umaschi Bers, Ph.D., advocates for teaching even the earliest learners to use technology to create.

Her 2018 book, *Coding as a Playground*, focuses on how children under age 7 can engage in computational thinking and become computer programmers, increasing their cognitive and social-emotional skills.

"Researchers and practitioners have long relied on Bers' deep understanding of early childhood computer science education and turned to her vision for the future of the field for inspiration and guidance. Her ideas have influenced my own philosophy of education, including the work at Code.org," its chief academic officer, Pat Yongpradit, said in a review of the book.

Her advice stems directly from her experience. Bers is a professor and chair in the Eliot-Pearson Department of Child Study and Human Development and an adjunct professor in the Computer Science Department at Tufts University. She heads the Developmental Technologies Research Group where she studies innovative ways to promote positive childhood development through new learning technologies. Bers co-developed the free ScratchJr programming language used by over 13 million children worldwide with Mitch Resnick of the MIT Media Lab.

PHOTO BY JOHNATHAN WILLIAMS

> In the U.S., there has been a push for coding to be associated with STEM disciplines, but that's not the case in most countries where coding is associated with thinking and critical abilities that touch upon every single academic subject.

Co-founder and chief scientist at KinderLab Robotics Inc., she's the creator of KIBO, a robotics platform for children 4 to 7 (without screens or keyboards) that can be programmed using wooden blocks. With KIBO, young builders learn programming and engineering while integrating arts and crafts. Her KIBO robot was a Tech & Learning Best of Show winner at ISTE19.

But introducing children to the building blocks of technology isn't a lab research project or a written assignment for Bers. She knows firsthand from her own three children, two sons and a daughter, how important play is to overall development. "I joke with students in Child Development 101 that a lot of the things we teach in that class can be learned at the playground," she says.

It's no wonder her educational technologies range from robotics to virtual worlds, and her work has earned recognition like the 2005 Presidential Early Career Award for Scientists and Engineers (PECASE), a National Science Foundation Career Award and the American Educational Research Association's Jan Hawkins Award.

A native of Argentina, Bers did her undergraduate work at Buenos Aires University, and in 1994 moved to the United States where she earned a master's degree from Boston University and a Master of Science and Ph.D. from the MIT Media Laboratory. She counts Seymour Papert, world-renowned pioneer in developing the first programming language for children, LOGO, among her mentors.

Bers makes sure to embrace playfulness in her own life as well. She speaks four languages, dances tango and has followed her passion all over the world. ISTE sat down with her to learn more about her expertise and thinking around early learners and technology.

PHOTOS BY TUFTS UNIVERSITY

WHAT HAS YOUR INTERNATIONAL BACKGROUND AND PERSPECTIVE BROUGHT TO YOUR WORK?

I have an international background personally, but I also work all over the world. I did my undergrad studies in Argentina and there was a lot of focus on critical thinking. That provided me with a basis for when I went to the MIT Media Laboratory to work with Seymour Papert. In his research group, we understood that the power of learning to code was about learning how to think in new ways.

When I travel and I speak at conferences, I can see that the idea of coding as a new way of thinking resonates. I have noticed that in the U.S., there has been a push for coding to be associated with STEM disciplines, but that's not the case in most countries where coding is associated with thinking and critical abilities that touch upon every single academic subject.

SOME SAY THE U.S. IS OBSESSED WITH PUMPING OUT PROGRAMMERS AND SOFTWARE DEVELOPERS. ARE WE HEADING IN THE RIGHT DIRECTION? WHERE CAN THINGS GO WRONG IN COMPUTER SCIENCE (CS) EDUCATION?

I think we can go very wrong if we think about CS education as creating programmers. It happens that in today's economy we're realizing we're going to need people who know how to code, but that's shortsighted, because what we really need is people who know how to think in new ways, people who know how to problem-solve, people who know how to collaborate with others and people who understand the power of using languages (all kinds of languages, natural and artificial) to express themselves.

That's why in my work I talk about coding as another language – that's our philosophy in the Devtech Research Group at Tufts. We teach coding as if we're teaching how to learn a new language and to express ourselves within that language.

Programming, first and foremost, is about learning how to use a language to create projects. To think about a particular problem using a constraint syntax and grammar, and to problem-solve to express a solution. From my perspective, the goal of teaching how to program in schools should be to develop an educated citizenry made up of people who know how to think. Learning how to code is another tool to teach children how to think in new ways.

Languages have the power to change the world and what we need is people who can change the world, not just people who can get a new job in the automated economy. In 30 years, we don't know what those new jobs are going to be – we're assuming they may need coding, but for sure they're going to require problem-solving and collaboration.

In early childhood, the notion that we're just teaching coding to prepare children for future jobs can be very damaging. It can hide the really important idea that I discuss in my book, that coding can become a playground for personal and social development. Children need to learn how to think, how to express themselves, how to play by themselves and with others, and how to use language to communicate.

Take literacy as an example. We don't teach young children how to read and write because we're preparing them for the jobs of the future. We assume all the jobs of the future will require a form of literacy, but that's not why we teach literacy. We teach literacy to empower people, to allow them to become part of society. And having a job is only one aspect of that. Being able to have a voice as a citizen is also very important.

I appreciate the efforts of all of the organizations that talk about the importance of coding to prepare the workforce of the future, it definitely helps with publicity to spread the word about coding. But as

> What we need is people who can change the world, not just people who can get a new job in the automated economy.

“We want CS or coding completely integrated with the arts, physical education, science, literacy – every single subject.

teachers, we need to be a little bit more thoughtful because we can’t just go with what matches the economy at the time.

We’re educating citizens, not just workers.

HOW CAN WE HELP TEACHERS GET OVER THE FEAR OR THAT VISCERAL RESPONSE WHEN THEY HEAR ABOUT TRYING TO TEACH COMPUTATIONAL THINKING (CT) OR CS IN EARLY CHILDHOOD EDUCATION?

I agree with teachers who have that reaction. If I’m an early childhood teacher who’s told I need to teach computer science, I would be groaning. I would be asking, “What, one more thing?” I think our message is wrong. That’s why I talk about coding as another language and as a way of thinking.

If we tell them, “Hey, here we have another tool among the other hundreds in your toolbox, but this one, coding, will help children think systematically, learn how to problem-solve and how to create and express themselves through integrated projects they care about” then I know teachers will be very responsive and will listen.

It’s really important to understand that we’re not saying let’s bring computer science to kindergarten. We want CS or coding completely integrated with the arts, physical education, science, literacy – every single subject.

Early childhood is a time for learning through playing and therefore we need a pedagogical approach to coding that welcomes play. Our early childhood classrooms

that include coding might look like a dance class or an art class. In my experience with working this way, teachers welcome it and see it as very refreshing, and they see another opportunity to bring back play into their classrooms, which they sometimes feel has been taken away from them.

IN YOUR BOOK *CODING AS A PLAYGROUND*, YOU SAY THAT THE PROCESS OF LEARNING TO PROGRAM CAN INCREASE SOCIAL-EMOTIONAL SKILLS IN CHILDREN. CAN YOU EXPLAIN HOW THE PROCESS IMPROVES THOSE SKILLS?

If we bring a playground-based, as opposed to a playpen-based, approach to coding – open-ended with lots of opportunities for free expression and creativity and collaboration – what's going to happen is that children will be allowed to create a project they really care about and, along the way, they'll run into conflicts and problems. This is a wonderful opportunity to help them learn how to solve those, which is something that a young child needs to learn.

A 5-year-old who encounters a problem might cry and put it aside because it can be very upsetting when things don't work. However, if we help them stay with the problem, look at it from a different perspective, try to engage in the art of debugging and trying to fix things, we're also helping them to work with their own emotions and how to manage frustration.

In our society and in schools, there's not always a second chance. In coding, there is a second chance, and kids can learn how to manage the emotions they're feeling and, instead of quitting, keep working at the problem and ask for help when needed. They learn how to not give up. There are always multiple paths for different solutions, it might just take longer than anticipated.

Again, coding by itself won't do it. What will do it is a teacher who understands that coding can be used to support social-emotional growth and, therefore, when a child is struggling with a problem, the teacher will not come and say, "Oh, do it this way and then let's move on."

MANY TEACHERS IN THE U.S. MIGHT SAY THEY HAVE NO TIME IN THE SCHOOL DAY TO TEACH CODING AND COMPUTATIONAL THINKING BECAUSE THE DAY IS ALREADY PACKED TEACHING REQUIRED SKILLS AND CONTENT. HOW WOULD YOU RESPOND TO THOSE EDUCATORS?

It depends on the grade level, but teachers should push for integration because there are lots of wonderful examples and there's a movement in the U.S. toward integration. Let's look at literacy as an example. You don't just use written language in your English class. You use written language in math, science, biology – any class. And that's the model teachers should be pushing for when thinking about coding.

I would say to them, talk to the administration, help them understand. Maybe try an integrated project first and see how to goes.

> When children are young, in the same way they're exposed to natural languages, they should be exposed to artificial languages – the languages that are "spoken" by computers and smart objects.

DOES EVERY CHILD REALLY NEED TO LEARN TO CODE? IF THEY WERE MORE INTERESTED IN MEDIA PRODUCTION OR VIRTUAL COLLABORATION, WOULD YOU STILL ENCOURAGE THEM TO LEARN CODING SKILLS?

Yes, I think so. Every child learns to read and write, not just to get a job but because it involves a new way of thinking; it's a way of changing the world. It's a part of being a contributor to civil society. Learning to code is also a new way of thinking. Not everyone needs to take AP computer science, that's not what I mean. But when children are young, in the same way they're exposed to natural languages, they should be exposed to artificial languages – the languages that are "spoken" by computers and smart objects. Not everyone will choose to become proficient at that, but everyone needs to understand how it works.

If by coding we mean learning to create a sequence of steps that will allow me to make something happen, then coding is everywhere. Programming your TV now requires coding. Coding is not only C++, ScratchJr or Python, it's about thinking step by step and being able to problem-solve. And that's something you need in everything you're doing.

HOW CAN WE ENSURE THAT CHILDREN ARE CARED FOR IN DIGITAL ENVIRONMENTS; THAT THE HUMAN TOUCH ISN'T LOST AS WE SPEND MORE TIME CONNECTING WITH EACH OTHER ONLINE?

That's a big problem and it's something I worry about every day. That's why I like the metaphor of coding as a playground. We spend time on the playground, but we don't spend our whole lives there. Children need exposure to different environments. The online world is an environment, but no one should spend all their time in one environment. Children go to the playground, they go to school, they go home. They spend time having dinner with family and visiting museums and libraries. It's common sense; people need to be exposed to all kinds of environments.

I like to give the example of books. We encourage kids to read, however if the child is reading at the dinner table, that's wrong and the parent would take the book away immediately. And it's the same when you go to a restaurant and children are given devices. It's terrible because that's a time when you build social skills and emotional skills and if we're going to replace face-to-face conversations with a device, even if it involves coding, that's a problem.

It's an issue that schools need to address, and I'm starting to see more and more schools having screen-free time. And, to be honest, this needs to be addressed by not blaming only the technology.

For example, lunch time at school is a time for socialization and social skill building. In the U.S., it's just incredible how little time children have for lunch and for recess. Kids are losing the ability to interact with each other and those kids are going to grow into adults, and then what kind of society are we going to have? Maybe the growing use of technological devices and their associated negative consequences might help schools understand there needs to be a fundamental shift in how school is organized, not only in terms of academic subjects, but also in terms of socialization time and opportunities.

WHAT SHOULD WE KEEP OUR EYE ON REGARDING AI-ENABLED TOYS AND TOOLS FOR CHILDREN?

We shouldn't fall into the trap that the newest is the best just because it says AI. AI means a lot of things and it means nothing. A complex search engine might be called AI. We shouldn't focus on the new types of high-tech toys and apps – the question should always be: What is the child able to do with this toy or this technology?

Not, what is this technology doing for the child? We need to turn it around and if we follow that, we'll be able to discern what things are worth investing more time and money to look into.

HOW CAN EDUCATORS MAKE THE CASE TO PARENTS AND LEADERS THAT CODING AND DIGITAL CREATION SKILLS ARE AS IMPORTANT AS MATH, SCIENCE, LANGUAGE ARTS, ETC.?

In my lab, we did a lot of work with family coding events with both ScratchJr and the KIBO robot because, particularly in early childhood, it's very hard for a parent who might not have any tech experience to imagine how their child can learn to program when they don't yet know how to read or write.

We strongly believe children learn best by doing, it's the same with adults – with parents. For example, parent conferences are a wonderful opportunity to invite parents to come an hour earlier and engage with their children in expressing and creating a project with technology.

And that ties back to literacy. Today, in most countries, and in the past in a different century, we had to convince parents that learning how to read and write was more important than working in the fields. There were all these family literacy movements that really changed the world. Schools didn't just say, "Give me your child and I will teach them how to read and write." They would work with the family.

I would encourage schools and teachers to really understand what has happened successfully in the history of how literacy became so important in education all over the world. There are very important lessons for us to learn from that literacy movement. After all, at one point, it was very hard to convince parents that literacy was important. But now, who would disagree? It might be the same with coding.

FROM DISCORD TO CIVIL DISCOURSE

Including the human aspects of digital citizenship can lead to cultural shifts

By Jennifer Snelling

Gun violence, climate change, immigration, abortion. There seems to be no end to the number of divisive issues that are causing people from all walks of life to lash out in angry ways.

It's not just that we disagree; it's that we seem to have lost all sense of common ground. In fact, many people actually believe that those who don't share their political and social beliefs are bad or detrimental. According to a 2018 Georgetown University poll (bit.ly/2MAeiHh), an astonishing 60% of both Democrats and Republicans believe that "members of the opposing party pose a very serious or somewhat serious threat to the United States and its people."

The prickly question for educators then is this: If adults – even our leaders – can't discuss these thorny issues in a constructive way, how do we teach students to debate important topics with civility and mutual respect?

"We understand the youth is the next generation and will hopefully turn things around," says Maya Mahoney, the development director of the National Institute for Civil Discourse (NICD). "Empowering youth to feel they can change the course of a conversation and how discourse is used is key."

The NICD was established in 2011 in the wake of a shooting in Tucson, Arizona, that left six dead and 13 others wounded, including former Congresswoman Gabrielle Giffords. NICD's mission is to integrate research, practice and policy to promote healthy, civil political debate.

The NICD isn't the only organization aiming to foster civil discourse. There's also AllSides, a news organization that attempts to provide a well-rounded view of complex stories. Bridge the Divide is a group that unites politically active teens to promote respectful political conversations. And Better Angels is a nonprofit working to depolarize the U.S., in part by conducting workshops with people of different political views to help them find common ground.

Educators are also concerned and are looking for ways to help students engage in civil discourse. Kristen Mattson, the library media center director at Waubonsie Valley High School in Illinois, wrote a book on the topic. *Digital Citizenship in Action* offers ways for educators to help students become participatory citizens, actively engaging in their communities and developing relationships based on mutual trust and understanding with others in digital spaces.

ONE OF THE MOST VALUABLE SKILLS IS TO ASK QUESTIONS, RATHER THAN SPOUT OUT VIEWPOINTS. THE PURPOSE OF A CONVERSATION IS NOT TO WIN THE ARGUMENT, BUT FOR EVERYONE TO BE MORE INFORMED.

Here are some ways she and other experts say we can help students – and ourselves – be better citizens, together.

Get informed

With kids spending much of their time in online communities, it's vital they choose social media communities intentionally and know the rules and culture of engaging within them. If the tenor of the discussion makes students feel uncomfortable, that's a red flag. They should find another platform.

This doesn't mean encouraging students to shut out views that are different from their own. Rather, it means expecting those views to be expressed respectfully and without hate.

How should a student respond if they see hate speech or some other inappropriate post? Teach them how to block an offensive user and report inappropriate content.

If the commenter is a peer whom the student already knows personally, Mattson suggests contacting the person face-to-face or via private message rather than calling them out in public. Kids shouldn't feel the need to jump in and be the behavior police, but

they can be a part of establishing norms and guidelines within their chosen communities.

NICD's Mahoney agrees and offers these tips for educators and adults that can be passed along to students who are navigating difficult situations with peers from school:

"When I see something on Facebook or Twitter that offends me and I really want to respond, most of the time, no matter how much I craft a message to sound kind or nonjudgmental, someone is going to misinterpret it," Mahoney says. "Honestly, the most powerful thing to do regarding social media is ignore it or respond and ask to continue the discussion over coffee. Once you are no longer hiding behind a social media platform, a more productive conversation will come out of it."

Build skills

Mattson says educators can help students engage respectfully both online and in person by teaching skills and strategies like these that are effective in either environment:

Socratic seminars: Formal discussions, often based on a text, during which a leader asks open-ended questions. Within the context of the discussion, students listen closely to the comments of others, think critically for themselves, and articulate their thoughts and responses to the thoughts of others.

Discussion circles: A small-group strategy where students read a text on their own and then share their personal interpretation, insight or questions. This technique can be used to prompt discussion about magazine or newspaper articles, blog posts or books.

Evidence-backed viewpoints: An opinion supported and guided by reliable scientific evidence, reputable new sources or their own anecdotal experience. Students should learn to employ the CRAP detection method of media literacy, asking the following questions: Is the information current? Is it reliable? Who is the author and what are their credentials? What is the purpose or point of view of the author?

Respectful responses: Ways to keep discussions respectful are to listen first, avoid attacking the speaker or writer personally and use "I" statements instead of attributing opinions to the other person in the conversation.

In Digital Citizenship In Action, Mattson offers some concrete tips for framing conversations to keep things civil. Specific to online discussions, she suggests students take time to understand the original post before responding, tag the person to whom comments are directed and carefully craft the message so that it's more likely to be interpreted as intended. In addition, students can share evidence (fact-checked, of course) and personal experience, but remain respectful of the experiences of others.

Specific sentence frames can help students become comfortable with a robust, but civil discussion. To acknowledge someone's viewpoint, try, "Thank you, ____, for presenting your viewpoint. I agree because ____." To present an opposing viewpoint try, "____ said ____, but the evidence I found says ____." "I think it's important to remember ____ because ____." Or "I appreciate the experiences shared by ____, but in my experience ____."

One of the most valuable skills is to ask questions, rather than spout out viewpoints. The purpose of a conversation is not to win the argument, but for everyone to be more informed. A sentence frame to ask for help with this is, "I realize my views on ____ are limited. Does anyone here have experience with ____?"

Mahoney says we must "listen for understanding. Don't just nod your head and wait for your chance to rebut. Once you understand the point of view, you can respond more humanely."

Take action

This step encourages students to take their passion for a cause and put it into action. Andrea Trudeau, library information specialist at Alan B. Shepard Middle School, an affluent public school north of Chicago, says developing empathy is key for taking passion and turning it into action.

Trudeau wanted her students to experience the world outside their bubble, so she showed some immersive videos using VR viewers. The students were transported to the shores of Greece, looking out at the ocean. As a boat arrived and Sudanese refugees came ashore with tears in their eyes, the students experienced a moment in the lives of refugees.

THE FIRST, AND POSSIBLY MOST IMPORTANT, PORTION OF THE CONVERSATION IS GETTING TO KNOW EACH OTHER. THE KIDS TALKED ABOUT WHAT THEIR SCHOOLS WERE LIKE, DESCRIBED THEIR DIFFERENT PROMS AND DISCOVERED THAT MANY OF THE ARIZONA STUDENTS DIDN'T HAVE TO TAKE SPANISH BECAUSE THEY WERE ALREADY FLUENT.

Trudeau learned that a local temple was sponsoring a family from Aleppo who spoke no English and knew nothing about American life. Her students were eager to help. They came up with the idea of a private Facebook page where the students created different "welcome" videos, each explaining a different aspect of American life. They offered basic tutorials on how to use a microwave, how to move through the lunch line at school and even one introducing all the Disney princesses. The videos became a library of resources.

Trudeau expected about 10 students to show up to make the videos, but more than 50 kids stayed after school. She says the project helped her students develop a sense of empathy. When students read articles, they may feel sympathy for someone, but it's still easy to separate themselves from the others.

"We always say we want kids to be lifelong learners and improve their corner of the world," she says. "Our kids were inspired to pay it forward and help."

That's exactly what the 17-member coalition that created DigCitCommit (digcitcommit.org) had in mind when they made "engaged" one of five competencies of their new digital citizenship movement. The initiative aims to change the conversation about digital citizenship from don'ts to do's.

The "engaged" competency states that youth use technology and digital channels for civic engagement, to solve problems and be a force for good in both physical and virtual communities.

"When we think about how students 'engage' civically in their community we often think about traditional actions like service-learning projects, volunteering and voting," says Emily Davis, partnerships adviser for ISTE. "Each of these actions reflect personal responsibility and respect for the social contracts that govern our society. However, today much of our participation as citizens happens beyond the traditional boundaries of our physical communities in digital spaces, and DigCitCommit aims to shine a light on the importance of organizing, engaging and advocating as a contributing citizen online."

Have a conversation

The nonprofits AllSides for Schools and Bridge the Divide have joined forces to develop Mismatch, a platform that helps students make connections across different political, socioeconomic, ethnic or geographic regions.

Kris McCarthy, 10th grade world history teacher at Stillwater Area High School in Minnesota, says her students don't have much experience with different cultures due to a student population that's not very diverse. Using Mismatch, her class connected with a class in Arizona, near the border with Mexico. Mismatch sets up chat sessions for four students, two from each school, which they find to

be ideal for a productive conversation. Students then connect from their laptops, and the organization provides a conversation guide and timer.

The first, and possibly most important, portion of the conversation is getting to know each other. The kids talked about what their schools were like, described their different proms and discovered that many of the Arizona students didn't have to take Spanish because they were already fluent.

The topic of the conversation was citizenship, but the goal was to hear another person's life story and understand their perspective. Did they all complete the lesson?

"Nope," says McCarthy. "They were too busy having an authentic conversation. They gained a connection with kids who are different from them. The idea of citizenship impacted their lives in such a central way, and it was great that my kids were able to hear about their lives."

Mismatch has been beta tested with more than 300 students and all of the educators who participated rated it a "valuable" or "extremely valuable" experience. Eighty-three percent of participating students cited higher appreciation for different perspectives based on their Mismatch experience.

"I strongly believe that it's important to be provided with opinions other than your own; along with having avenues to gain perspective on the lives of others," says an eighth grade student who participated in the beta in North Carolina.

Kristin Hanson, director of Mismatch, says that's what the platform is all about. "When students make a positive humanizing connection with someone from a different background."

NICD says now is the time to act. Mismatch's platform and projects like McCarthy's Facebook welcome videos demonstrate how students can use technology to bring about positive change. NICD cites social theories that say that it takes only 3.5% of the population to act in a way that creates a cultural shift.

As digital citizens, our students can channel their passion for significant issues into a tipping point for inclusiveness, civil discourse and mutual respect.

JENNIFER SNELLING IS A FREELANCER WHO WRITES FOR A VARIETY OF PUBLICATIONS AND INSTITUTIONS, INCLUDING THE UNIVERSITY OF OREGON. AS A MOTHER TO MIDDLE AND HIGH SCHOOL-AGED CHILDREN, SHE'S A FREQUENT CLASSROOM VOLUNTEER AND IS ACTIVE IN OREGON SCHOOLS.

CONVERSATION STARTERS

When starting a conversation on a platform like Mismatch or face-to-face, livingroomconversations.org, a nonprofit focused on revitalizing civil discourse through conversation, suggests participants agree to the following:

Be curious and open to learning. Listen to and be open to hearing all points of view. Maintain an attitude of exploration and learning. Conversation is as much about listening as it is about talking.

Look for common ground and appreciate differences. In this conversation, we look for what we agree on and simply appreciate that we will disagree on some beliefs and opinions.

Be purposeful and to the point. Notice if what you are conveying is or is not relevant to the question at hand. Notice if you are making the same point more than once.

Show respect and suspend judgment. Human beings tend to judge one another, do your best not to. Setting judgments aside will better enable you to learn from others and help them feel respected and appreciated.

Be authentic and welcome that from others. Share what's important to you. Speak authentically from your personal and heartfelt experience. Be considerate to others who are doing the same.

Own and guide the conversation. Take responsibility for the quality of your participation and the conversation by noticing what's happening and actively support getting yourself and others back on track when needed.

Virtual safaris bring the wilds of Africa to the classroom

By Jerry Fingal

Every year, Stacey Moore's third graders in Virginia Beach, Virginia, are transported to Africa where they ride along with a naturalist on safari.

It all happens virtually via WildEarth Kids and safariLIVE, a free program for schools that offers 45-minute live tours of wildlife preserves in South Africa and Kenya. The tours are led by naturalists who offer narration and answer questions from students in real time.

"You're able to observe the animals in their natural habitats while sitting in a classroom," Moore said. "While I can't take them to Africa, I can bring Africa to them, and the wow effect is amazing, especially when they see their name up on the screen as the naturalist answers their question."

WildEarth Kids is the educational branch of safariLIVE, which live-streams two, three-hour tours with naturalists as they drive through Kruger Park in South Africa and Maasai Mara reserve in Kenya. The daily webcasts began in 2006 but the school version has only been around since 2015.

The safaris transport Moore's students who are growing up on the Atlantic coast to a land completely unlike what they're used to. It connects what they're learning in their science units to the real world.

The live and unscripted nature of the safaris lets students feel like they're participating in an event. And it's a thrill for students to see the naturalists talk directly to them as they answer their questions, Moore said.

"They are literally driving along and they turn and they face the children on the screen and they say, 'Oh Sammy, what a wonderful question. You

PHOTO BY ERIC MOORE

PHOTO BY ERIC MOORE

want to know what's the difference between the spots on a leopard and the spots on a cheetah.' … It gives kids individual attention."

It also shows students how they can communicate with experts around the world, which is a hallmark of the Global Collaborator standard within the ISTE Standards for Students (iste.org/standards/for-students). The Global Collaborator standard expects students to "use digital tools to broaden their perspectives and enrich their learning by collaborating with others… ."

"They're Skyping clear across to another continent," Moore said. "They're like, 'Here I am in my classroom in Virginia Beach and I'm communicating with someone clear across the world.'"

Only four school groups can watch a webcast at a time to allow the naturalists to answer as many questions as possible. Moore works with her students beforehand on coming up with good questions.

"The children work in small groups and we talk about different animals that they might see prior to the actual session because we don't want them to go into it cold turkey," she said. "We want them to ask some really thought-provoking questions."

For third graders, that can mean asking about how the animals have adapted to survive in the African environment, why they have fur when the climate is so hot or the purpose of elephant tusks, Moore said.

Why it works

It's authentic.

There's a lot going on that can grab students: exotic places and animals, reaching across the world via technology, the authenticity of the experience and personal attention from the naturalists. "That's the big wow factor with this," she said. "Their research comes to life when they see their question, and then they get the validation and the reinforcement of what they've actually spent the time doing."

The special allure of animals.

The safaris present exotic creatures up close. "I think that children are intrinsically motivated to learn about animals," Moore said. "I think they care for them and they want to know more about them." It also plants a seed in children about conservation and stewardship of the Earth. "I think it's something that grows as they grow," she said.

It's a good fit for curriculum.

For Moore, the safariLIVE presentations are just a part of larger science units and are a natural fit for the third grade curriculum. "I could easily use it three times a year to focus on animal adaptations, habitat and food chains. It's also a very good just to have it on muted in the background and students can see the animals as they're doing another science project." The safaris are also age-appropriate. The naturalists are careful to avoid scenes of violence or mating activity for younger children and ask before showing such scenes to older audiences.

JERRY FINGAL IS A FREELANCE WRITER AND EDITOR SPECIALIZING IN EDUCATION, BUSINESS AND FINANCE.

PHOTO BY WILDEARTH

The five pillars *of* edtech procurement

As educators rethink how they make technology decisions, these are the critical factors to consider

By Nicole Krueger

You never know what you might find in a school closet. Old floppy disks. Mimeograph paper. Textbooks from the 1970s.

What Wiley Brazier V discovered when he walked into a storage closet at his former middle school was far more jaw dropping: 50 brand-new iPads, still in the box, with a year-old delivery date.

"Technology can be a waste. It can be wasted," says the Baton Rouge principal. When schools buy new devices without a plan for implementing them, or when they purchase a shiny new tool without considering its instructional value, today's hottest technology can end up gathering dust in the shadows.

It happens more often than technology directors care to admit. An analysis of K-12 district spending found that, on average, 67% (bit.ly/2p7JMvp) of educational software licenses go unused. Given that districts use as many as 548 edtech products each month and spend a total of $13.2 billion a year on technology, that equates to a lot of wasted money – and even more wasted opportunities for students.

What all this points to is that edtech procurement needs fixing. According to a recent Digital Promise study, school districts are frustrated by what many describe as a largely "hit or miss" approach to vetting their technology purchases. In places where teachers have a lot of autonomy in choosing technology, districts may end up with a hodgepodge of apps that don't work together. On the flip side, districts that don't involve teachers in technology purchases at all often struggle with low adoption rates because the software doesn't meet classroom needs.

Although more than 60% (bit.ly/2PciJJY) of teachers believe they should be the primary decision-makers regarding technology in the classroom, only 38% are even consulted. Bringing teachers into the procurement process from the beginning is critical to ensure the policies and processes work at both the classroom and district levels. Collaborating with teachers helps build buy-in on both sides as educators become more supportive of the district's constraints and administrators become more considerate of teachers' needs.

"Edtech procurement has to be done with a lot of thought and intentionality," says Susan Bearden, chief innovation officer for the Consortium for School Networking (CoSN). "I think a lot of times people can be swayed by the 'ooh, bright shiny' phenomenon, or perhaps they're being moved by edtech vendors who make it sound like their product is going to cure all the problems in education. It's important for schools and educators to do their research and not to make their technology purchases impulsively."

But what does that research look like? What boxes should an edtech product check before getting the green light? To help nudge districts toward a more rigorous and comprehensive vetting process, ISTE partnered with Project Unicorn to identify five pillars of edtech selection. Educators can use these

Data interoperability is the factor that can elevate edtech from a tool of convenience to a driver of student achievement.

critical factors as a rubric for evaluating individual digital tools as well as a guide for redesigning their procurement processes to become more nimble, inclusive and responsive to teachers' and students' needs.

"The act of choosing a product or resource to use in a teaching and learning setting is a really difficult one that comes with a lot of contextual factors," says Mindy Frisbee, senior director of learning partnerships for ISTE. "Context is really important, but these pillars are the critical areas to consider when looking at products. They should be part of the conversation no matter where you get reliable edtech product information."

1. Data interoperability

Imagine a middle school teacher investigating why a student is struggling in their class. They pull up the student's performance records across all classes and discover high competency in science. By drilling down into which specific tasks the student has performed in science class, the teacher can gain valuable insights into the student's intrinsic motivation and leverage their passion for science to improve achievement in another subject area.

But that can only happen in a technology ecosystem where all digital tools work together as a cohesive whole. In a Digital Promise survey, 67% (bit.ly/35XAcvy) of respondents identified the lack of data interoperability as a widespread problem, and more than half agreed it's an urgent one.

Data interoperability is the factor that can elevate edtech from a tool of convenience to a driver of student achievement.

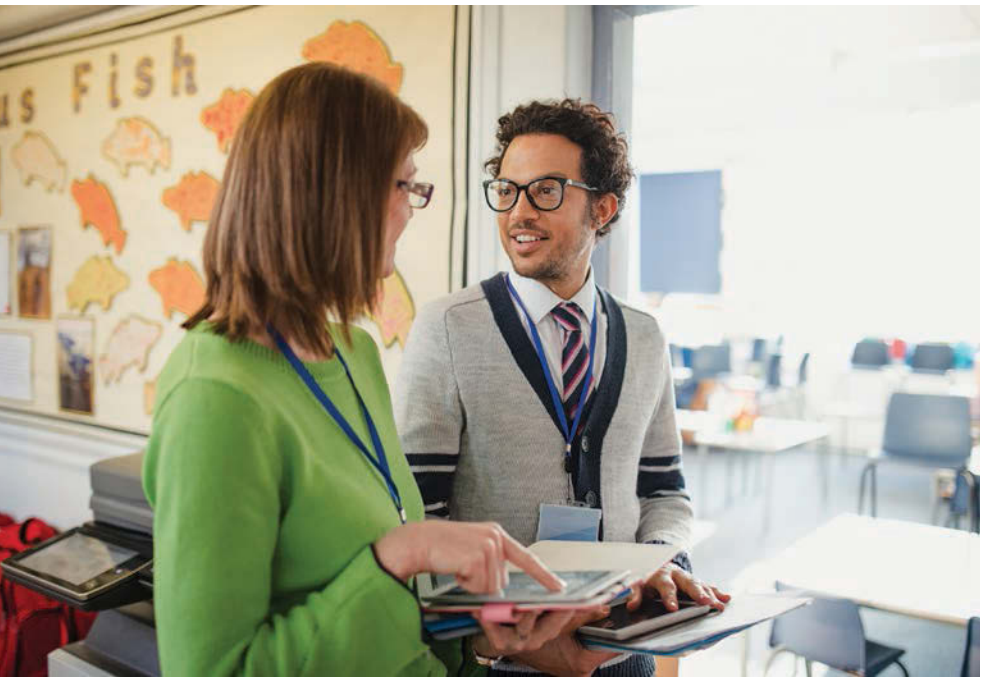
"Interoperability is pretty much one of our non-negotiables," says Brian Seymour, director of instructional technology for Pickerington Local School District in Ohio. He added that every approved app must be able to sync with the district's edtech management platform. "If they can't work with us on that, it's almost an immediate no. Being able to sync is one of the biggest considerations for us right now so we can pull data out and put it in dashboards."

In districts where schools and teachers have a lot of autonomy in choosing digital tools, building interoperability into the procurement process can be a struggle.

"If a city has 190 schools, and assessment and curriculum tools are selected by the school for a specific population, that often leads to the question of how do you educate the folks who are making the decisions at the school level in the district ecosystem so they're privileging interoperability?" says Erin Mote, executive director and co-founder of InnovateEDU.

One way is to encourage on-the-ground decision-makers to seek out vendors that have signed Project Unicorn's pledge to prioritize interoperability.

"It's really about easing teacher time so they're not hand-coding data out of a PDF and putting it into a grade book. How easy it is for you to get data out of that tool in a way that's usable and actionable? I think at



its best, interoperability means that teachers, district administrators, parents and even students have real-time access to data about learning and learning outcomes."

2. Student privacy

If educators want to harness the power of student data, they must also be prepared to protect it. That means creating a districtwide data privacy policy that aligns with legal privacy standards – and making sure every tool they use complies with it.

A growing body of state and federal privacy laws, from the Family Educational Rights and Privacy Act (FERPA) to the Children's Online Privacy Protection Act (COPPA), places the burden on school districts to safeguard student privacy in a technology landscape where some vendors mine user data in exchange for offering free tools and services.

"In my experience, most people really aren't aware of the amount of information they're giving away when they download an app or sign up for web services," Bearden says.

Part of the problem is that many edtech vendors don't clearly communicate what their privacy policies actually are. Vetting classroom tools for data privacy compliance often requires educators with no legal expertise to wade through hard-to-understand documents in an attempt to parse the provider's intent. Some vendors, especially startups, don't have policies in place at all.

In California, where districts are required to vet every vendor on 14 criteria, cooperative agreements like Silicon Valley Education Foundation's Unified EdTech Contract are helping districts improve legal compliance by keeping tabs on which products meet federal and state requirements. Other resources, such as "The Educator's Guide to Student Data Privacy" from ConnectSafely, can help teachers navigate the legal morass.

"I read all of our vendors' privacy policies to make sure they align with what we want. If they haven't agreed to the Student Privacy Pledge yet, I ask them to sign our internal privacy policy," Seymour says, adding that he has discontinued services the district has been using for years when the vendors refused to sign. "No privacy policy is an immediate no."

3. Standards alignment

In a district that spends a million dollars or more per year on educational software, there's no room for tools that merely digitize traditional practices, such as worksheets or flashcards, without adding any curricular value. That's why alignment with learning standards is the first thing Seymour considers when vetting an edtech tool.

Frisbee concurs.

"When you're looking at an edtech product, you want to know it's following best practices for digital pedagogy," Frisbee says. "What does it look like when you're an effective digital learner? What kinds of skills and knowledge do you need, across a content area or grade level? Any product should be integrating these practices."

Regardless of a district's specific mission or learning goals, choosing technology that aligns with the ISTE Standards helps ensure students not only master a content area but develop their digital learning skills in the process.

"If you have a product that has integrated what is outlined in the ISTE Standards for Students, it has integrated learning opportunities for students to demonstrate their proficiency," Frisbee says. "But has it been built in explicitly, so they're not only doing it but they know why they're doing it?"

To fully align with ISTE's Empowered Learner standard, for example, a tool should not only allow students to set their own learning goals, but it should also help them understand why it's important to do so – and

If educators want to harness the power of student data, they must also be prepared to protect it. That means creating a districtwide data privacy policy that aligns with legal privacy standards – and making sure every tool they use complies with it.

Vetting a tool based on standards alignment can be time-consuming, but ISTE's Seal of Alignment program offers a powerful shortcut.

reflect on whether they've met them. Similarly, tools that allow students to practice computational thinking and design skills need to also impart foundational knowledge about the process so learners can apply it to new situations.

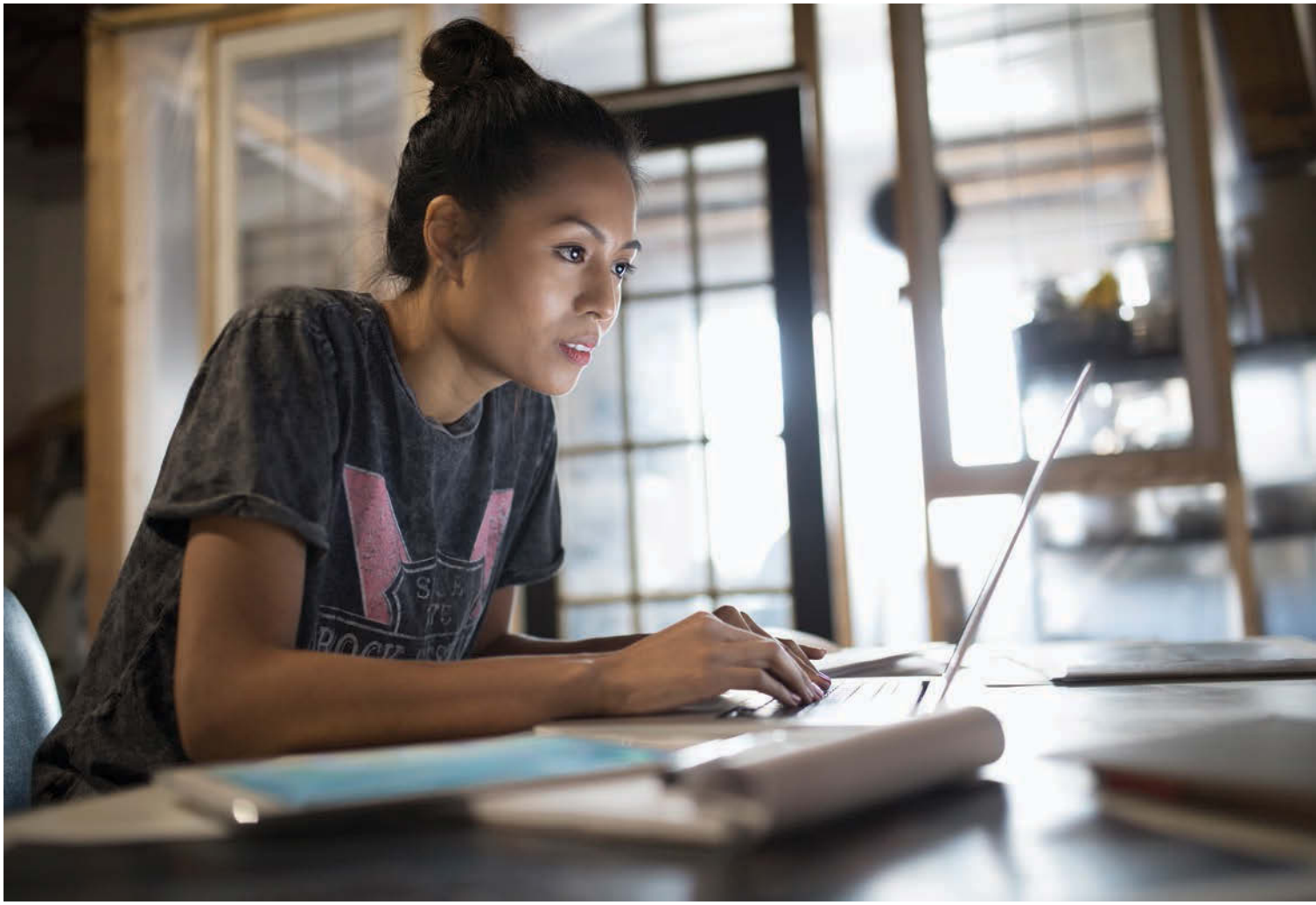
"It's important to have that metacognition as part of the learning process," she says.

Vetting a tool based on standards alignment can be time-consuming, but ISTE's Seal of Alignment program offers a powerful shortcut. In addition to discovering edtech products that have already undergone a rigorous standards-based review process, educators can find "specialized information on how the tool addresses specific components of the ISTE Standards," Frisbee says.

4. Research and evidence

In the ever-expanding edtech universe, pinpointing a solution that actually works is like trying to find extraterrestrial life using an off-the-shelf telescope. Nine in 10 educators admit they rely on general web searches to gather information about edtech, while 59% (bit.ly/32EzYHE) base their procurement decisions on recommendations from peers.

"There are thousands of programs out there in the world," Seymour says. "How



do you know this one will truly be the one that's going to make a difference?"

Educators prefer to make decisions supported by sound research and evidence of a product's efficacy, but such research often doesn't exist. Even when edtech providers do offer evidence to back up their claims, it may be viewed as untrustworthy; 76% of educators don't believe vendors are qualified to conduct reliable research about their products. Additionally, much of the evidence that is available comes from local, small-scale pilots that may not take into account contextual differences across districts.

"The question is not just whether the evidence is reliable or something works. What's more important is to understand the context of it," says Katrina Stevens, director of learning science at Chan Zuckerberg Initiative. "For example, if somebody uses a tool in an urban environment and you're in a rural area where you don't have access to the same things, you need to find evidence that answers questions like: Are they similar enough to my district where it would work? Do I need to tweak it?"

Until edtech vendors are able to back up their claims with more robust research, the onus is on educators to conduct their own inquiry, whether that means running a pilot before implementing a solution districtwide or seeking out similar districts that have used the tool successfully.

"What do I want the solution to do? What evidence exists for it already? Was it gathered in places that look like me? How will I know whether it's working? Those basic questions are a good way to guide how you're making decisions," Stevens says.

Another consideration that can help teachers vet the effectiveness of technology is to examine whether each tool is grounded in learning science principles, which are already backed by research. Stevens recommends using Transcend Education's primer, "Designing for Learning," as a guide

Who's at the table?

When addressing edtech procurement, it's important to ensure all key stakeholders are involved in the decision-making process. Effective procurement requires collaboration between teachers, technology coordinators and curriculum teams.

Teachers: More than 60% (bit.ly/2PciJJY) of teachers believe they should be the primary decision-makers regarding technology in the classroom, yet only 38% percent are even consulted. As the end users of edtech tools, teachers offer valuable insight into what tools they need, how they use technology and what support they require to use it effectively.

Curriculum coordinators: Curriculum specialists are often the missing link when assessing the instructional value of new technology. Involving them early in the procurement process helps guide districts toward tools that directly address learning goals, integrate well with the curriculum and are backed by sound research.

Technology coordinators: When technology teams are left out of edtech decision-making, schools run the risk of wasting money on software that isn't supported by the district's infrastructure. Technology expertise is crucial for ensuring data interoperability, student privacy and effective implementation.

for evaluating whether a tool incorporates learning science principles.

"Look at strategies the learning sciences have defined as successful for learning and figure out whether the programs support those types of things – things like retrieval practice," says Seymour, a participant in ISTE's Course of Mind learning sciences initiative, which explores how to incorporate the learning sciences into edtech procurement. "Look at how the brain works. Is there some type of that rationale built into the program?"

ISTE's Edtech Advisor can also help educators with tool selection. This platform, available to ISTE members, allows educators to rate and review edtech tools and apps based on their experience using them in their classrooms in their particular contexts.

5. Implementation and ongoing support

When technology gathers dust in a storage closet, it's often because the school or district either didn't have an implementation plan in place or didn't provide enough training and support for teachers. In a nationwide survey by Common Sense Media, 31% (bit.ly/2JdCnl4) of educators reported that they're not able to use technology because of a lack of training. More than 60% of teachers said they receive insufficient communication from their district about the edtech available for classroom use.

Before making a purchase, it's important to consider whether the right policies, staff and training programs are in place to support the tool's ongoing use. Otherwise, the technology is likely to offer a poor return on investment.

At Oak Park School District 97 in Illinois, senior director of technology Michael Arensdorff tracks ROI through LearnPlatform, which allows him to see how often each app is used. Through ongoing tracking and analysis, he's ableto pinpoint which tools aren't working as intended and why.

"Do we renew next year, or do we need to gather more data? Do we need to provide more professional learning to maybe a grade level or a certain building or the whole project? We can identify where we need more professional learning around how the tool should be used in the classroom."

Thoughtful implementation, ongoing training and adequate support are just a few of the conditions needed to get the most value from edtech purchases. The ISTE Essential Conditions offer a framework for developing the elements necessary for effective implementation and use of technology. When incorporated into the procurement process, they can help districts successfully leverage digital tools to improve student outcomes.

Procurement varies from district to district, but the five pillars represent the key areas every educator needs to consider when making decisions about edtech. As districts increasingly focus on revamping their procurement processes to reflect these best practices, increasing teacher awareness is critical.

"It's important that districts include teachers when talking about the procurement process," Bearden says. "They need to make sure they clearly communicate policies around procurement to their school communities, not just once but regularly."

NICOLE KRUEGER IS A FREELANCE WRITER AND JOURNALIST WITH A PASSION FOR FINDING OUT WHAT MAKES LEARNERS TICK.

When technology gathers dust in a storage closet, it's often because the school or district either didn't have an implementation plan in place or didn't provide enough training and support for teachers.

Darryl Joyner shares how the ISTE Standards for Education Leaders guide privacy, data management policies in his district.

Using the ISTE Standards to guide system-level decisions

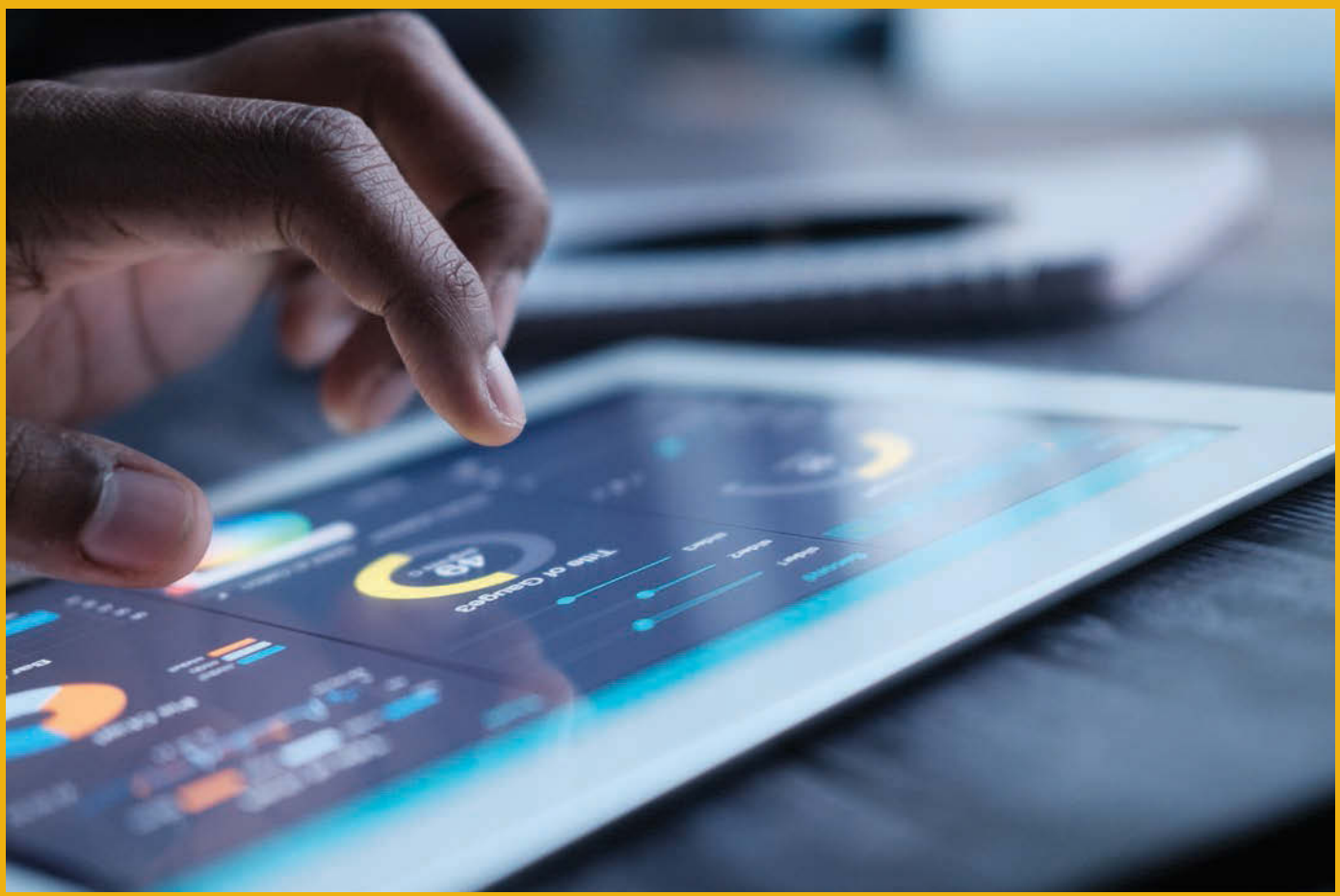
By Darryl Joyner

As a district leader for Arlington Public Schools, I have a somewhat wonky title that barely fits on a business card. I'm an instructional technology integration analyst and I serve as the liaison between the Department of Teaching and Learning and the Department of Information Services.

But that description does a poor job of illustrating what I – along with the rest of my team – do. We create the technology ecosystem that makes the magic happen. The magic being all the deep learning made possible by technology.

Over the last year or so, we've spent a lot of time digging into the ISTE Standards for Education Leaders. What we've discovered is that when our visioning is done in a way that aligns with the Education Leaders Standards, it creates a landscape that better positions teachers and students to successfully align their work with the ISTE Standards for Educators and the ISTE Standards for Students, respectively.

A great deal of my team's work falls under the System Designer standard within the ISTE Standards for Education Leaders. I'd like to share an example of how we use



While we spend a lot of time talking about the importance of responsible data practices, we also embed data compliance processes into how we do business as a school system.

the fourth indicator to drive privacy and data management policies.

Standard 4.c.: *Protect privacy and security by ensuring that students and staff observe effective privacy and data management policies.*

In our district, we take student data compliance very seriously. While we spend a lot of time talking about the importance of responsible data practices, we also embed data compliance processes into how we do business as a school system. Over time, these processes have evolved as we balance the importance of data policy with the need for flexibility in teaching and learning.

In the early stages of our 1:1 initiative, we wanted educators to have the ability to add apps and programs to devices at the school level, but we knew that these resources had to be reviewed for compliance with federal student data guidelines. Our solution was to create a process that integrated our school-based instructional technology coordinators (ITCs) into the app request process.

This strategy not only ensured that all requests would be vetted by each ITC for student data compliance, but it also helped to create a more effective culture of communication and collaboration between the ITCs and the teachers in their buildings. It also addressed indicator 3.a. of the Empowering Leader standard: *Empower educators to exercise professional agency, build teacher leadership skills and pursue personalized professional learning.*

The initial request became a conversation starter and topic for planning. It provided a way for the ITCs to get a better sense of intended instructional outcomes and for teachers to have a better sense of the possibilities of technology integration. This process ensured that we were following federal guidelines with fidelity and put the ITC right in the middle of all instructional planning and professional learning that involved technology-integrated instruction.

The challenge, though, was a lack of consistency in interpreting federal guidelines. In some cases, the same app would be vetted by several ITCs who drew different conclusions about whether it was compliant. We also discovered that some vendors were creating products that didn't seem able to gather or transmit data – i.e., there was no login required, but their privacy policies were written in such a way that we couldn't be sure.

That's when we made two important decisions. The first was that while requests would still be made by teachers, we would select one person in the district to vet all digital tools for data compliance. Because we would now have hundreds of teacher requests being reviewed by one person, this strategy slowed down the process for adding digital apps and programs, but it greatly improved compliance and consistency. We could now be sure that all digital resources were being vetted with a more consistent interpretation of federal guidelines.

Secondly, we took control of data privacy agreements by writing our own. That is, instead of always being in a position

to have to decipher every company's privacy policy, we created our own offline data privacy agreement and asked vendors to agree to *our* terms. Every digital purchase over $10,000 required a vendor signature.

It set the tone with the vendor: Security and proper treatment of our data was vital. It also enabled us to weed out vendors that were not like-minded. Not all vendors welcomed the idea.

Some didn't want to lock themselves into an agreement that might eliminate the flexibility for them to change their policy in the future. Others felt they could be overwhelmed by having to sign a plethora of agreements with other school systems. Our response was that if they wanted our business, this is how it had to be. Over time, most vendors came to see that agreeing to our policy was in the best interest of both parties.

By integrating the ISTE Standards at every level of decision-making and practice, districts can execute systemwide technology implementation with greater fidelity. In addition, the various categories of ISTE Standards tie together in a way that's more logical for teachers and students to see the connection between their work and system-level decisions.

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ISTE®

Lisa Nash shares how creating a robust digital library platform supports students, teacher librarians and library staff.

PHOTO BY STEVE SMITH

Digital library helps students become responsible, autonomous learners

By Lisa Nash

Today, students' access to information is made possible by their connection to devices both at home and at school. As the digital learning and library services officer for the Catholic Education Diocese of Parramatta in Australia, it's my job to support teacher librarians and other teaching and library staff in developing students' critical information, digital literacy and knowledge-creation skills.

Our diocese uses an inquiry-based learning model and sees teachers as guides who cultivate deep student-driven learning. Many of our schools have 1:1 BYOD device access or a device ratio of one device for every two students.

To navigate the plethora of digital content, tools, shifting information boundaries, new learning modes and robust access to information, we knew we had to think about the best ways to instill digital literacy skills.

Based on research on the importance of digital libraries as meaningful spaces for creating knowledge, we developed a digital library platform that's a dynamic extension of each school library's physical collections and that supports the development of information and digital literacies for all users.

We started by looking at how we could provide equitable, simple access to high-quality digital content that might be out of reach financially for individual schools. We were able to provide access across our 81 schools by purchasing selected databases, ebooks and video platforms that all schools can use.

We also formed consortiums with other dioceses to provide even more benefits to our users, like access to more resources from using pooled budgets and shared support learning materials to use the resources. For example, we have an ebook consortium with Overdrive that increased access to a variety of resources.

With widened access to high-quality authoritative resources, students can easily connect to books that meet their personal learning needs. They can search and access this material from anywhere, anytime and via any device to suit their just-in-time information needs. And features like digital note-taking, highlighting, built-in definitions, text to speech and zoom options help support the diverse learning needs of our students.

Along the way, we implemented an enterprise digital library platform for each school that can be customized to meet each school's particular focus and needs. The platform is networked so users can search across all school libraries, giving all educators access to a wider set of resources. Each platform has a simple-to-use integrated Google Slide set that can be customized to provide information pertinent for each school's students and promote their own school library resources and services.

We continue to work with our teacher librarians, library staff and teachers to be sure they understand our digital library platform tools and can develop suitable digital literacy scaffolds and supports for students to become autonomous learners.

We're currently clarifying the key skills of our teacher librarians so we can provide a consistent set of guidelines for their work. The crosswalk between the Future Ready Librarians framework and the ISTE Standards for Educators has helped guide our work, and we created a help website to support staff as they develop these skills (bit.ly/2KWMlID).

These are just a few of the thoughtful but replicable ways we're supporting teacher librarians, library staff and students to learn and teach in a digital world.

LISA NASH IS THE DIGITAL LEARNING AND LIBRARY SERVICES OFFICER FOR THE CATHOLIC EDUCATION DIOCESE OF PARRAMATTA IN AUSTRALIA. FOLLOW HER ON TWITTER @LISANASH9.

Wiley Brazier V overcomes challenges, cultivates partnerships and leverages technology to serve his students.

Wiley Brazier V

He uses technology to help students soar

By Nicole Krueger

Many of the disadvantaged students in Wiley Brazier V's hometown have never traveled beyond the city limits. But when he opens the doors to his new K-12 charter school at the Baton Rouge Metro Airport in Louisiana, they'll be able to fly a plane right out of their own hangar.

Brazier, winner of the 2019 ISTE Education Leaders Network Award for Exemplary Leadership and founding principal of two successful schools in Texas, was the natural choice for getting the STEM-focused Helix Aviation Academy off the ground. He earned his wings after using blended learning to help low-performing students achieve double-digit gains in Dallas.

His secret: "I do what's in the best interest of the kids and what's in the best interest of the organization. That's it."

Sometimes that means overcoming the resistance of fellow educators to new technology. Sometimes it means DJing school dances to save money so he can invest more in his students. This year, it means cultivating partnerships with organizations such as the U.S. Air Force, Boeing and Amazon to give students a robust curriculum in engineering, robotics and aviation.

The aviation academy, one of the first in the nation to be housed in an airport, seemed almost tailor-made for the technology enthusiast and former science teacher who became an educator so he could mentor kids in need of strong male role models.

Going through adolescence without his father, who died when he was 12, Brazier had only an older brother to serve as his guide into manhood – until he reached high school, where he found an inspirational figure in his school principal.

"There were a lot of kids I grew up with who didn't necessarily have their fathers in their lives, and I saw some of the paths they were taking, and they weren't necessarily where I wanted to go," he says. "I ended up deciding I wanted to be a role model for kids who looked like me that were also growing up in a low socioeconomic situation without their fathers."

He was teaching science in Louisiana and engaged to be married when Hurricane Katrina hit in 2005, throwing his wedding plans into chaos. His wife's wedding dress and ring were lost in the flood, and the cruise ship on which they'd planned to spend their honeymoon was appropriated to

Wiley Brazier V says he became an educator so he could mentor students in need of strong male role models.

PHOTOS BY WILLIAM BOYD LEE II

"Technology has been a driving force behind everything that I have done. People back away from it, but we need to provide students with the support to be able to compete globally in the future."

help hurricane victims. Amid all the changes, they decided to start a new life in Dallas, along with other relocated Louisianans.

In Texas, Brazier completed his master's degree and transitioned into administration, quickly developing a reputation for turning around underperforming schools. He became the first African American male principal at Lewisville Independent School District, where he opened a new high school targeting dropouts and over-age students. Two years later, he became founding principal of another school for over-age and under-credit youth, using blended learning to help the district achieve a record number of graduates.

With his career on the rise, Brazier moved his family back to Louisiana and became a regional coordinator for the state's department of education, but he missed the daily interactions with students. He returned to the principal's office, this time at a magnet middle school, which under his leadership earned an A rating from the state. Determined to purchase the district's first set of 60 Chromebooks for his students, he had to face off with the district's chief technology officer, who opposed the idea.

"Technology has been a driving force behind everything that I have done," he says. "People back away from it, but we need to provide students with the support to be able to compete globally in the future."

When a new superintendent came on board, the tide shifted and Brazier was tapped to run pilots for replicating his 1:1 Chromebook initiative districtwide. He also launched the first Google Boot Camp within in the district, which today has more than 31,000 laptops.

Now Brazier is in a different kind of pilot seat, building yet another school from scratch – this time with an emphasis on STEM. And he has a whole year to plan, recruit and get the right technology in place.

"I am so excited, so over-the-moon excited about the opportunities now available for our kids – even more so because it's in the same neighborhood I grew up in," he says of his new position. "With our kids and where our school is located, it can make a huge impact on the overall economics in our city."

NICOLE KRUEGER IS A FREELANCE WRITER AND JOURNALIST WITH A PASSION FOR FINDING OUT WHAT MAKES LEARNERS TICK.

PHOTO BY HARRISON HURWITZ

TAKE ACTION

Stacey Pasquel shares how ISTE affiliate AzTEA is empowering educators to become advocates and learning leaders.

3 ways AzTEA empowers educators through professional learning

By Stacey Pasquel
President, Arizona Technology in Education Association

As an ISTE affiliate, the Arizona Technology in Education Association (AzTEA) supports ISTE's vision of empowering educators to harness technology to accelerate innovation. To this end, we provide professional learning opportunities that prepare educators to be advocates for edtech and guide educators in cultivating supportive professional learning communities.

Recently, AzTEA partnered with Edvolve to become one of 13 Certification Authorized Providers (CAP) for ISTE Certification for Educators, a competency-based, vendor-neutral certification for educators. As a CAP, we provide educators with professional learning and coaching prior to them completing their competency-based portfolio that showcases artifacts and reflections to demonstrate their implementation of the ISTE Standards.

How do CAPs empower educators to lead and learn? Here are three ways ISTE Certification cohort participants become advocates for edtech as a result of this program:

1. Educators set personalized professional learning goals. Setting learning goals is one of the most meaningful ways to become an advocate for yourself as an educator and, as part of ISTE Certification training, participants set learning goals based on their levels of experience and personal areas of interest.

During the two days of face-to-face training, educators explore various pedagogical approaches and how technology can enhance them. Participants then choose a professional learning trajectory to follow as they complete the online portion of the training, and they continue to reflect on the effectiveness of these instructional approaches as they create teaching artifacts that demonstrate their application of the ISTE Standards.

2. Educators actively participate in local and global learning networks. Educators are trained in cohort groups, and it's within these local networks that participants forge professional relationships with like-minded peers to pursue their professional interests and advocate for meaningful edtech practices at the local, state and national levels. Participants complete their training within the same cohort of educators and, upon completion of their certification, become part of a global network of ISTE Certified Educators with whom they can share successes, seek support and leverage the collective expertise of the group.

These networks empower participants to have a strong voice in advocating for edtech policies and lead the way for others to begin their own journey to leverage technology to enhance teaching and learning.

3. Educators stay current with research that supports improved student learning outcomes. An essential component of the professional learning that CAPs provide is the underpinning of research in the learning sciences and the way in which these findings inform our professional practice.

Understanding how technology can be integrated to support high-yield instructional strategies is truly one of the most empowering aspects of the ISTE Certification training and leads to a powerful collective voice in advocating for the critical role of technology in transforming education.

AzTEA is committed to empowering educators by cultivating a professional learning community that continually strives to improve teaching and learning. Serving as a CAP is one of many ways we stay true to our mission.

To see the entire list of ISTE Certification CAPs, including additional ISTE affiliates, visit iste.org/Certification.

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This question was asked and answered in ISTE Connect (iste.org/connect), home of ISTE's Professional Learning Networks.

How do you feel about cell phones in the classroom?

As adults, when we come to work, our phones are not taken from us. I feel that we should give some instruction to our students on how, when and why to use cell phones. If we don't teach them, who will?

Mike Scoville, K-12 library media specialist, Gibraltar Area School District, Fish Creek, Wisconsin

We fear what we can't control. Educators need to find ways to adapt. Stop giving every student the same test. Help students learn time management. Start integrating the cell phone into the students' lessons appropriately.

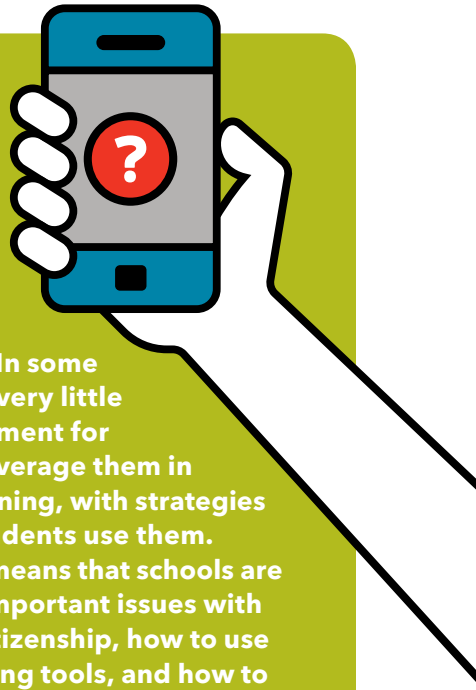
John Sonnenberg, regional manager at eDynamic Learning, Round Lake, Illinois

I don't agree with cell phone bans, as cell phones are computers; they are far more than a "phone" and they can support learning. Teachers and parents need to instruct our students and children on responsible use.

Jacqueline Gardy, content manager and editor, Office of English Language Programs, U.S. Department of State/ ECA

My school allows them on campus and in the classroom when teachers believe it is an appropriate time to use them. Banning something doesn't teach the skill of self-regulation or the appropriate time to use a tool.

Tim Bray, technology director, Cheongna Dalton School, Incheon, South Korea



I teach with an open device policy and create checkpoints for what they are doing in class with all their devices to keep them on schedule with the course expectations. In some school districts, I see very little professional development for teachers on how to leverage them in the classroom for learning, with strategies for when and how students use them. Banning cell phones means that schools are not engaging in the important issues with students on digital citizenship, how to use their devices as learning tools, and how to identify and report issues with them. Some parents also struggle with how to manage them and school districts have the opportunity to do parent workshops to educate them as well.

J. Camille Dempsey, Ed.D., assistant professor, Edinboro University,Edinboro, Pennsylvania

Students are still developing self-control. Why put them in a difficult situation by allowing cell phones for only certain times/ tasks? It's like putting a kid in a candy store and saying don't touch! Just think of when you are in a movie theater and you know using it will bother others. You still take a peek when it buzzes!

Lisa Ben-Haim, edtech coach/consultant, Highland Park, New Jersey

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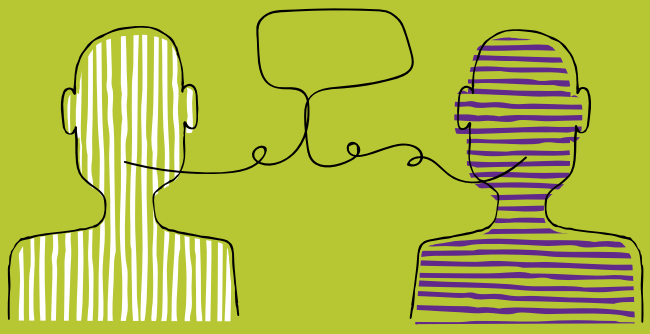

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