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10 big findings about ed-tech privacy

BY LAURA ASCIONE
Managing Editor, Content Services

Student information privacy is a hot-button topic, and a new Common Sense Education survey shows a widespread lack of transparency and inconsistent privacy and security practices among ed-tech applications and services.

Over a three-year period, researchers evaluated 100 popular ed-tech products and services and found that just 10 percent of those applications or services met minimum criteria for transparency and quality.

While the findings don't necessarily indicate that vendors are doing anything unethical, they could mean that the application or service is violating federal or state laws, depending on how it is used.

The overall lack of transparency is troubling, according to the authors, because in their

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Survey: Boys have waning interest in STEM careers

BY LAURA ASCIONE
Managing Editor, Content Services

Boys' interest in STEM careers has dropped over the past year, while girls' interest remains the same, according to an annual survey from Junior Achievement and Ernst & Young LLP.

Last year, 36 percent of surveyed male high school students said they wanted a STEM career, but this year, only 24 percent reported the same. For two years straight, just 11 percent of female high school students say they want to pursue a STEM profession.

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Why design thinking isn't just for techies

BY LAURA GUEVARA

I was really intimidated when I first heard about design thinking. I also had a lot of questions: What is design thinking? Isn't it just for techies? How is this relevant to my elementary school-level classroom?

The epicenter of design thinking is the d.School at Stanford. According to the d.School, "… design thinking is a methodology for creative problem solving. You can use it to inform your own teaching practice, or you can teach it to your students as a framework for real-world projects." Founded in 2004 by a few Stanford professors including faculty director David Kelley, the d.School offers courses to all students at Stanford, no matter their major. They also have made their approach available to a variety of industries,

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analysis, transparency is "a reliable indicator of quality." In fact, the applications and services in the evaluation that tended to be more transparent also tended to engage in qualitatively better privacy and security practices.

Researchers created three privacy evaluation tiers to describe each application or service:

1. Use Responsibly, which indicates that the application or service meets our minimum criteria but more research should be completed prior to use

2. Use with Caution, which indicates that the application or service does not clearly define the safeguards to protect child or student information

3. Not Recommended, which indicates that the application or service does not support encryption or lacks a detailed privacy policy.

In addition to the just 10 percent of applications or services that are recommended with responsible use, 80 percent are recommended for use with caution, and 10 percent are not recommended for use at all.

The research yields 10 key findings:

1. A majority of applications and services use default encryption of information for login and account creation.

2. A majority of applications and services (89 percent) disclose an effective date or version number of their policies.

3. A majority of applications and services disclose that they do not rent, lease, trade, or sell data, but many are non-transparent.

4. A majority of applications and services are non-transparent or explicitly allow third-party marketing.

5. A majority of applications and services are non-transparent or explicitly allow traditional advertising.

6. A roughly equivalent percentage of applications and services have either non-transparent, better, or worse practices about behavioral advertising.

7. A majority of applications and services are non-transparent or explicitly allow third-party tracking.

8. A majority of applications and services are non-transparent or explicitly track users across other websites.

9. A majority of applications and services are non-transparent about creating ad profiles.

10. A majority of applications and services are non-transparent or explicitly allow the onward transfer of data. eSN

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including education.

Schools often assume that design thinking is a "techie thing" and send their edtech coordinators and directors to design-thinking workshops. Although design thinking has been adopted widely by the tech industry, its approach can be applied by any organization that wants to adopt a way to solve problems empathetically and collaboratively. In schools, design thinking complements inquiry- and project-based approaches to teaching and learning.

I had the privilege of attending a couple of deep dives into design thinking at Stanford's d.School. When I attend workshops, I'm always thinking of ways to bring back what I've learned and make it relevant to my colleagues and students. My aha moment came when I realized that, like the scientific method, design thinking is just another inquiry cycle that guides students by giving them steps to conduct research. Design thinking is a social-scientific approach to solving human-centered problems. Its main driver is empathy, a skill you can build and foster in your classroom.

The inquiry cycle

If you're like me, the steps of the scientific method have been thoroughly imprinted on your brain since middle school. Like the scientific method, design thinking has discrete steps that guide students through the inquiry cycle.

Empathize: Choose one topic and ask lots of questions. What's your least favorite chore? What don't you like about it? How does it make you feel? Dig deeper with why questions: Why does it matter to you? Why do you do it?

Define: Now that you've empathized deeply, what information stands out? What is the person struggling most with, and how can they accomplish their goal?

Ideate: What type of solution do you want to offer that person? A tech product? A script? A plan?

Prototype: What can you create for this person that will meet their needs?

Test: Go back to the person and ask them to test it out. Does it meet their needs?

Now, let me break it down so you can see how it aligns with an inquiry cycle you're already familiar with. I've included concrete examples and student artifacts to help you draw connections to your own teaching.

Step 1: Empathize.

When you make observations and ask questions using the scientific method, you are empathizing, which is the first step in the design-thinking cycle. In design thinking, empathizing with the person you're helping requires you to ask questions to better understand the issue you're attempting to solve. Empathizing helps us practice how to ask questions and engage each other in meaningful conversation without judgment.

A group of my second-graders wanted to explore the topic of deforestation. They started by writing questions so they could focus their inquiry and dig deeper. They asked, Who is deforestation affecting? Why do people cut down trees? How can people protect them? What happens when all the trees are cut?

Then, they used Post-it notes to document answers to their questions that they found in books and through interviews. This was a great opportunity to talk

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about primary and secondary sources of information as well as to practice asking questions without judgment.

Step 2: Define.

Once students collect the information (empathize), they move on to defining the issue. This is similar to a hypothesis in the scientific method. In design thinking, defining the issue means that you're finding some strong trends in the information to make a "needs statement." The information is showing you a strong need, and the statement will help students focus on a specific issue to solve for a person. Check out this second-grader's needs statement:

"Racist person needs a way to mend their relationships to build a community with equal rights."

Notice the verbs "mend" and "build." It's really important that the needs statement is actionable. Verbs are a key component to writing a needs statement.

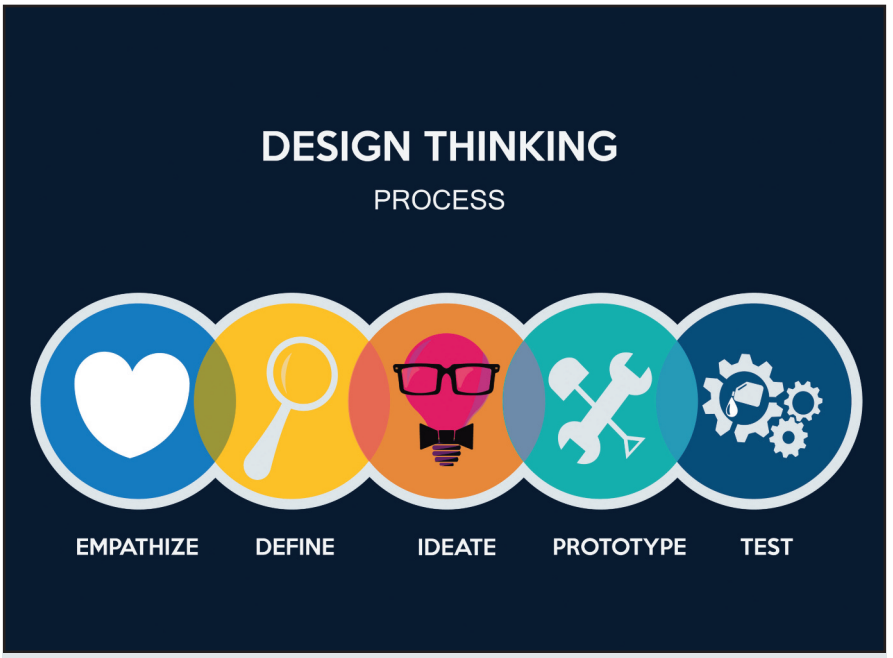
Steps 3 and 4: Ideate and Prototype.

After students zero in on a specific "need," they begin the ideating and prototyping phases. Similar to testing your prediction in the scientific method, this is when they create models to meet the need identified in the needs statement. In these phases, it's important to give students a range of tools to get creative, such as a variety of paper, pens, recycled materials, tape, ribbon, and so on. The prototype can be anything from a drawing, a script for a play, a how-to manual, or a Lego model.

Design thinking allows students to use their imagination in creative ways. Students empathize deeply with someone they know or an issue they're passionate about. As a result, your students are motivated to communicate, collaborate, plan, write, and revise.

Step 5: Test.

Finally, students test by connecting back to their user to get feedback on their prototype. During this phase, we practice how to receive feedback. We talk about not getting defensive, being open to suggestions, and asking more questions. This phase connects back to our discussion on empathy, which is the central driver of design thinking.



My fellow teachers, please don't be intimidated by design thinking. If you're familiar with the scientific method, you can integrate this cycle into your teaching. It's collaborative and empathetic and challenges the designer to listen carefully to another person's needs.

Give it a try!

My fellow teachers, please don't be intimidated by design thinking. If you're familiar with the scientific method, you can integrate this cycle into your teaching. It's collaborative and empathetic and challenges the designer to listen carefully to another person's needs. Listening with empathy is central to the process, and I strongly believe it's a skill that is transferable to any situation.

You may want to use it with your students to redesign their homework experience or their seating arrangements, solve issues on the playground, or negotiate responsibilities in the classroom. Have a look at this Virtual Crash Course Playbook provided by the d.School to help guide you through the cycle. Design thinking is an inquiry cycle that can help students dive deeper into our relationships with each other, foster deep empathy in our classrooms, and, ideally, lead to real change in our lives and communities. eSN

*[**Editor's note:** This post originally appeared on Common Sense Education.]*

Laura Guevara has been a K-5 educator for over 14 years. Her passion is guiding students to be agents of their own learning through guided inquiry. Her current role is to support teachers with technology tools to enhance all of the awesome things they're already doing in the classrooms. Connect with Guevara on Twitter @LauraGuevaraPYP.

It's time to become the storyteller-in-chief for your school

Do you know how to tell your school's story and communicate your brand?

BY STACEY PUSEY

When polled about public perception of K-12 schools in the United States, attendees of the recent edWebinar, "Transform Your School's Brand by Becoming a Storyteller-In-Chief," offered mixed results. While there are some positive stories, many seemed to think that there isn't much faith in public education. Trish Rubin, founder of Trish Rubin Ltd., and co-author with Eric Sheninger of BrandED: Tell Your Story, Build Relationships, and Empower Learning, explained that much of the issue stems from how school leaders tell their story and communicate their brand.

First, Rubin challenged the attendees to think about why brand matters to education. She wasn't talking about logos or typically generic mission statements, though. What she meant by brand is the emotion, the gut feeling that someone has when they think about your district. Classrooms are no longer ivory towers where students are educated in isolation, she said; they are places where children live and learn for the majority of their lives. Teachers are trying to build a community, and the perception of that community is vital to getting support from the school members and beyond.

Emphasizing the rise of social media, Rubin next talked about how community members are sharing these perceptions and their stories about school. Educators need to be tuned into the "camera culture" and the value of pictures in presenting their brand. If your district's educators and administrators aren't doing this, other constituents will without any influence from school or district leadership. Even if the school leadership is putting out news stories, the pictures from the constituents will be the controlling message.

Before any message about the school can be shared, educators and administrators need to start with themselves. Who are you as an educator? What value do you bring to the students, the teachers, the school? Educators shouldn't just rely on themselves, though. Ask others how they perceive you and see how your perceptions compare. In addition, before schools start trying to share their brand, they need to understand all of their constituents and what they value. Without knowing your constituents' needs, you don't know what stories to tell that will resonate with your community.

Once a school is ready to take control of its story, the team should focus on three main types of arguments. First, concentrate on the ethos, which relates to the spirit of the school. What are the unseen stories, the information that you haven't shared yet that your community should know about? How can you relate your mission by showing what you are doing instead of just listing events?

Focus on telling, not selling. And don't worry about the "big story." Create small moments that the community can latch onto. Then, move on to arguments based on emotion. What does you school offer, and what would your community miss if it weren't there? Finally, you need to appeal to your constituents' reason. In other words, what results can you share that celebrate your message?

Ultimately, the goal is to create a collective culture where it's not one administrator, teacher, or leader communicating your message, but distributed storytelling where—first a team at your school, then members of your community—are sharing the same messages. Improving the perception of your brand can help improve your culture, performance, and resources. At every step you are building strong relationships that will continue the positive impact on your students and their learning.

About the Presenter

Trish Rubin is the founder of Trish Rubin Ltd., a communications consultancy based in New York City. In her journey from a classroom educator to a business consultant, she draws from over 25 years of communication success in local, state, national, and international educational settings. Change process and innovation of teaching and learning for children and adults power her work and thought leadership.

A self-described "educationalist" with a passion for strategically developing powerful networks and authentic relationships, she has worked as a K-16 teacher, reading specialist, literacy coach, program developer, and central office administrator and now as an advocate for schools. Rubin is also an engaging platform and motivational speaker. She currently is an instructor of marketing and brand management for international business students at CUNY's Baruch College, a member of the Baruch College Executives on Campus Advisory Board, and a networking amplifier for the New York City-based innovative ad agency sparks & honey. Rubin co-authored the book BrandED: Tell Your Story, Build Relationships, and Empower Learning with Eric Sheninger.

Join the Community

Family Engagement & Community Outreach in K-12 is a free professional learning community where district and school administrators, teachers, and families can explore all aspects of family engagement and its positive effects on student achievement.

This broadcast was hosted by edWeb.net and sponsored by Blackboard.

*[**Editor's note:** This piece is original content produced by edWeb.net.]*

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16 tools to promote inventiveness in the classroom

Inventiveness is a critical component of innovation here's how to use it in the classroom

BY LAURA ASCIONE
Managing Editor, Content Services

Inventiveness–the bridge between inventions and innovations–gives students license to use their creative imagination. And today's classrooms need more of it.

During ISTE 2018, educational technologist Kathy Schrock presented a variety of tools and strategies to help boost inventiveness in the classroom.

Invention is the creation of a product or the introduction of a process for the first time, while innovation occurs if someone improves on an existing product or process. The link between those two, Schrock said, is inventiveness–the ability to brainstorm, to be flexible, to elaborate, and to see original ideas come to fruition.

A few questions can pinpoint whether a classroom is conducive to creativity and inventiveness:

1. The classroom's physical environment offers flexible resources

2. The classroom's learning climate has students actively participating in discussions, allows for collaboration, and values different points of view

3. Students are engaged, seek different viewpoints, take risks, reflect on learning, and have time to think creatively and develop ideas

"Something might need to be done in the classroom to help students," Schrock said. Educators might consider "giving students freedom to create assessments and allowing varying formats, setting aside creativity time, using technology to broaden assignments, or using unconventional learning methods such as having students create a TED Talk to review a chapter in a textbook."

Approaches like these encourage students to use empathy, collaboration, and creative imagination skills, she added.

For instance, teachers could:

- Tell students stories about situations that accidentally led to new products such as the Slinky or the Post-It Note. Talking about interesting failures or epic fails, such as Bic for Her pens, can get students engaged and talking about all kinds of ideas.
- Ask students to write headlines for a news article focusing on inventions in the year 2050 and see what they can imagine.
- Pick a well-known object or tool and ask students how they might improve it or change it for the better.

Among Schrock's many resources is this Tallyfy guide to design thinking, which helps students think about innovation as it relates to helping different consumer audiences with real-world problems. Educators can use it to guide students through the design thinking process. The six steps in the process focus on understanding, exploring, and materializing: Empathize, define, ideate, prototype, test, and implement. Schrock suggested adding a seventh step for reflection.

There are many strategies and tools aligned to those seven steps that educators can use to encourage inventiveness and design thinking in schools.

Empathize (including polling tools, social media, and experts):

1. Poll Everywhere
2. Google Forms

Define:

3. Wufoo
4. Airtable

Ideate (including mapping tools, real-time collaboration tools, and curation tools):

5. Popplet
6. Stormboard
7. Feedly

Prototype:

8. Padlet
9. Animation Desk
10. Google Slides

Test:

11. Twitter
12. Polling tools

Implement:

13. Adobe Spark tools
14. Weebly

Reflect:

15. Blogger
16. Evernote

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Stacey Pusey is an education communications consultant and writer. She assists education organizations with content strategy and teaches writing at the college level. Pusey has worked in the preK-12 education world for 20 years, spending time on school management and working for education associations including the AAP PreK-12 Learning Group. She is working with edWeb.net as a marketing communications advisor and writer.

The New Librarian: How to set up a Global Citizens program

BY MARGARET COLE

At Tudor Elementary School in Anchorage, Alaska, "show and tell" has an inspiring twist.

Instead of sharing an interesting rock or a favorite toy, they are sharing messages of peace and personal commitment to making the world a better place. And, through live video conferencing, they're sharing their messages with students in Argentina, Pakistan, Brazil, Canada, and the United States, as well as locations throughout Europe, Africa, and Asia.

Tudor's 346 K-6 students are part of the school's "Young Global Citizens" project spearheaded by school librarian Michelle Carton, a long-time educator and founder of Global Education Alaska. Carton runs the program, which was recently named the Grand Prize winner in the 2018 Follett Challenge, earning $60,000 in products and services from Follett School Solutions for the way it showcases what it means for her students to be global citizens, how it impacts their learning, their perspectives on the world, and the impacts they can have on it.

As students learn about the world, the United Nations, sustainable development goals, global challenges and opportunities, and how perspectives can be different but honored, they ponder how peace may be different to each other and to people in other parts of the state, the nation, and the world.

Carton developed the project as a way to expose her students to the wider world and to inspire them to really think about what peace means to them personally, what peace means in Alaska, and what peace means to kids in other locations and cultures. Here are some steps for other schools that want to start a program like this.

1. Determine your purpose in setting up a global citizens program. What do you want to achieve by the end of the school year? What's best for your teaching style and for your students? "I've always wanted my students to be able to navigate the interdependent complex world with confidence and an open mind," says Carton. "Everything I do includes lessons and messages that illustrate how interesting other cultures are and how much we can learn from each other."

2. Rethink how you teach everything (regardless of subject, math and science included). Think about how you'll discuss topics with these four things mind: teach students about the world; help them understand and appreciate other perspectives in the world; connect students to the world beyond your town, state, and country; and practice what you preach.

3. Think globally AND act locally. Recycle in your classroom. Use illustrations and examples that feature people who look different and have different names. Celebrate and cite the accomplishments/research of people in small, faraway countries. Go the extra step to find a diverse group of subject-specific heroes. If you do this with young people and engage yourself fully by modeling this behavior, you'll experience greater growth for all parties.

4. Read books on global education. Carton recommends anything by Homa Tavenger (Growing Up Global: Raising Children to be At Home in the World) and Fernando Reimers (Empowering Students to Improve the World in Sixty Lessons).

5. Find the best global education resources that work for you. Great places to start are Skype in the Classroom, Generation Global, PenPal Schools, and Exploring by the Seat of Your Pants.

6. Use any resources found at Global Education Alaska. Created by Carton, this free website has resources created and curated with the intention of bringing other educators along.

7. Join Google+ Communities that support international project design and connecting classrooms. Some of Carton's favorites are Connected Classrooms Workshop, Classrooms Without Borders, and Bringing the World into the Classroom.

The outcome for students

The children involved in Carton's project are seeing how global connecting has affected their learning and their perspective on the world and the impact it has on the world as a whole. By partnering through self-created global projects with hundreds of schools, educators, scientists, activists, and diverse individuals, they are making the change they want to see in the world through their own heartfelt thoughts, ideas, and passions.

"Our students learn communication, critical thinking, creativity, collaboration, and technology skills while they practice empathy, kindness, openness, and compassion," says Carton. Each child has an opportunity to express how he or she wants to make their mark on the world, pledging to take action in ways that they feel passionate about, from picking up trash, helping others, saving trees, building houses for homeless, or giving and not taking.

"Our kids learn that, at the end of the day, they really aren't all that different from other kids around the world. They really get that for our world to prosper, we all need to do our part, learn about the challenges and solutions, and take action," says Carton. "They believe that the future of their world is in their own hands." eSN

You can learn more about Michelle Carton and her program at Global Education Alaska and follow her on Twitter @AkGlobalTeacher. For more information on entering the Follett Challenge, visit FollettChallenge.com.

Margaret Cole is a freelance education writer based in Albuquerque, New Mexico.

How to start a virtual coding boot camp in five easy steps

BY MEREDITH HOOVER

It never ceases to amaze me when I see a middle school student excelling at virtual robot simulations, a seventh grader using computer code to solve a STEM problem, or an eighth-grade robotics team brainstorming ideas and then developing a full-blown operating robot. Even these tiniest victories go a long way, with students getting hands-on with advanced technologies and then taking that experience to college and/or out into the workforce.

Challenged by budgetary constraints, time limitations, and the wide selection of new classroom technology that's being thrown at them, K-12 districts aren't in the best position to set up onsite robotics and coding classes for their students. To overcome these challenges, several West Virginia schools are leveraging a technology platform that's completely online, and that's helped them bring the fascinating world of robots to a wider band of students.

Here's how you can do it too.

1. Find an internal champion to lead the cause. To think beyond basic K-12 curriculum and truly prepare students for today's work world, you need a champion to get behind the cause. We found ours in Donna Burge-Tetrick, superintendent of Nicholas County (WV) Schools. She secured a grant from the West Virginia Department of Education to provide a robotics instructor to support teachers in robotics implementation. She has also continued to fund and support all aspects of our program, which is now growing steadily.

2. Pick products that complements your school's current resources. We're using CoderZ by Intelitek, a platform that is completely online with virtual robot simulations, thus reducing the need for robotics kits and pieces. This has helped us cut equipment expenses to a minimum and, even better, our teachers need no specialized training to teach robotics classes, which cuts the costs even more. This is particularly beneficial for districts that have been unable to establish or expand their own robotics programs.

3. Get teachers hands-on and on-board early. One of my biggest challenges is getting teachers on board, comfortable, and willing to take on the challenge of robotics and coding instruction. The program we selected is easy for teachers to put into practice because they don't need any additional resources or expensive robots to implement it in their classrooms. I've used it with both middle schools in our county and not only did they both participate, but they also both went to the Cyber Robotics Coding Competition (CRCC) finals.

After the event, I spoke with the teachers and heard positive feedback from them. Now, they're talking about getting robotics/coding classes for sixth grade for the upcoming school year. The CRCC helped pave the way for that because it was such a positive experience; teachers could see the success and wanted more.

4. Weave robotics and coding right into the school day. This not only levels the playing field for all students—including those who may not have Internet access at home—but it also encourages collaboration among students and creates an atmosphere of accountability. For example, students have dedicated class time to work on the coding/robotics program and are also given the links to access information if they want to continue working at home. And while in-class robotics is still a fairly new concept, it's a great tool for overcoming truancy issues and for getting students to like school again. (We're offering it at our Alternative Learning Center next year, in fact.)

5. Foster a love of STEM across the board. As technology continues to make its way into the workforce in all fields, being tech savvy and able to understand code are becoming "must haves" for graduates. Knowing this, teachers should be talking to students about potential careers that involve STEM, creating project-based experiences for them, integrating robotics into their standards-based lessons, and fostering a love of STEM for both girls and boys.

Our new online program has helped us achieve these goals, and now we have 4-H clubs across the county picking up robotics and offering it to their young members. It's all about fostering the engineering and scientific fields, developing students' abilities, and stoking their interest in these opportunities.

With more K-12 schools rising up to meet the STEM challenge, it's a great time for all of us to embrace coding competitions, virtual robotics platforms, and other tools that are out there for the asking. The more we can do on this front, the more we can prepare students for success in school, in the workforce, and in life. eSN

Meredith Hoover is currently a robotics instructor for Nicholas County (WV) Schools. In addition, for the past five years, she has facilitated eLearning courses for the West Virginia Department of Education.

3 ways I instill a growth mindset in my students

A math teacher explains how embracing mistakes and believing in the power of perseverance helps students in her class and in life

BY ASHLEIGH ZIEHMKE

For my math students, having a growth mindset—the belief that intelligence can be developed through application—removes the idea that some students are good at math and some students never will be. This is crucial in math classrooms, especially as students progress through their academic careers. When their mindset shifts, their approach to math changes. They see a challenge or a new learning experience as an opportunity. Rather than simply giving up, students will plan out their approach and use their background knowledge to find a way to solve the problem.

It's no secret that math can be challenging for everyone, so mistakes should be celebrated. This way, students can embrace and overcome math challenges rather than fixate on their inabilities. Just because a student is in a low-skilled small-group lesson doesn't mean that student can't persevere.

If educators instill a growth mindset in students at an early age, they'll use this approach for the rest of their lives. The good news is that you can start teaching a growth mindset at any point in a student's academic career. Here are three ways I make sure my students are developing a growth mindset.

1. Establish a common language and understanding

At the beginning of each school year, I fuel a discussion with my students about the differences between a growth mindset and a fixed mindset. We talk about these differences before we even discuss a growth mindset in terms of math education. This pushes them to ask themselves which path of learning they'd rather go down: a path of growth or a path of fixating on challenges.

In the first quarter, my students learn about the power of "yet." I tell them that even though they may not understand a math concept "yet," with perseverance they will eventually understand and overcome. They also learn about changing their self-talk by simply adjusting words and statements. This gives them a more positive outlook on their potential.

2. Reinforce a growth mindset throughout the year

Each week in my homeroom class, we read aloud books that have a twist on growth mindset. The Girl Who Never Made Mistakes, by Mark Pett and Gary Rubinstein, and What Do You Do With A Problem, by Kobe Yamada, seem to really reach students. The books spark great discussions about the differences between growth and fixed mindsets. They also illustrate why making mistakes is an important step in the learning process.

We blend Standards for Mathematical Practice with growth mindset as we talk about persevering and talking through common problems. The two go hand in hand when it comes to emphasizing perseverance and development. From there, I give them weekly STEM-based challenges. All of the problems are open ended, which allows students to explore different avenues to succeed in the challenge.

I also use Matific, an interactive gaming program I align with my math curriculum. It challenges students in a way that pushes them to keep moving forward. The gaming episodes help my students progress individually, no matter their level.

3. Measure and share progress

Matific has an integrated reporting tool that shows teachers where students are excelling and where they are struggling in math, based on the math games they complete. I use this feature to track progress for my academic success groups. I can see which students understand the concept and which ones need more practice.

From there, I can assign personalized gaming episodes and regroup my lessons accordingly. This boosts students' motivation tremendously, because they're assigned episodes that are at their level, so they have an opportunity to feel successful and see growth in their work.

Using assignments and tools that complement my discussions about embracing the challenge of math ensures that instilling a growth mindset in my students is an ongoing process. eSN

Ashleigh Ziehmke is a fourth-grade math teacher at Spring Hill Elementary School in Wisconsin Dells, Wisconsin.

How wearables, AR, and VR help students develop SEL skills (part 1)

Teachers can use AR & VR to create experiences that promote deep self-knowledge, social awareness, and other important SEL skills

BY JASON SWANSON

In her post, "Now is the Time to Redefine Readiness," my colleague Katherine Prince detailed how the world of work is changing, creating an urgent need to redefine what it means to be ready, and proposed a new foundation for readiness that prioritizes:

- **Deep self-knowledge** will help people develop visions for our lives and continue to discover their own personal and professional strengths, weaknesses, passions, and emotional patterns.
- **Individual awareness** will help people recognize and regulate our emotions; understand the triggers that spark them; and shift to more desired, productive emotional states when needed.
- **Social awareness** will help people recognize others' emotions and perspectives, enabling us to build relationships in support of learning, collaboration, and innovation and foster inclusive work environments.

The exponential advances of digital technologies are one of the main drivers of change reshaping work and creating the need to redefine readiness, but they may also help educators support young people's development of key future readiness skills. Three digital technologies in particular–wearables, augmented reality (AR), and virtual reality (VR)–show great promise in helping to cultivate social-emotional skills such as those in the new foundation for readiness:

Wearables, AR, and VR have the potential to support educators and other education stakeholders in creating experiences characterized by immersion, embodiment, contextualization, and self-awareness, all vital for developing deep self-knowledge, and individual and social awareness.

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Experience Factor	Definition	Potential Learning Benefits
Immersion	Intense involvement and engrossment in an action, setting, experience, or environment.	Can enable deeper understanding and connections to material and concepts. Can support simulation of real-world contexts or actions.
Embodiment	The representation of ideas, identities, experiences, and/or concepts in tangible forms.	Can aid in understanding different perspectives and points of view, supporting development of critical thinking and social-emotional skills. Can help make concepts more vivid.
Contextualization	The placement of something, such as a word, action, place, or event, into a larger frame that provides more information.	Can enable development of deeper understanding or comprehension of a concept or subject. Can enable students to share their perspectives in relation to the object or place of interest.
Self-Awareness	Clear perception of one's strengths, weaknesses, emotions, and motivations.	Can lead to increased levels of self-knowledge, supporting greater degrees of purpose and student agency. Can support reflection on learning, including the creation of personal learning profiles. Can support learners in setting and pursuing goals.

5 ways to truly help principals succeed

New $24 million study examines how principal supervisors can play a key role in principals' achievements

BY LAURA ASCIONE
Managing Editor, Content Services

Principals and districts benefit when principal supervisors move beyond the role of administrator to coach and mentor, according to a new Vanderbilt University report.

It is the first of three studies of The Wallace Foundation's Principal Supervisor Initiative, a four-year, $24 million effort studied by Vanderbilt and Mathematica Policy Research.

The report, "A New Role Emerges for Principal Supervisors: Evidence from Six Districts in the Principal Supervisor Initiative," details the implementation of five key components to reshape the supervisor position in six large, urban school districts.

Each district changed the job descriptions and restructured central offices so that principal supervisors could step away from operational, administrative, and compliance tasks to coach, mentor and advise principals to be more effective as instructional leaders.

The six districts are: Broward County (FL) Public Schools, Baltimore City (MD) Public Schools, Cleveland (OH) Metropolitan School District, Des Moines (IA) Public Schools, Long Beach (CA) Unified School District, and Minneapolis (MN) Public Schools.

"Executive coaching is prevalent in high-performing organizations, but it's not typically done in school districts," says lead investigator Ellen Goldring, Patricia and Rodes Hart Professor of Educational Leadership and Policy at Vanderbilt's Peabody College of education and human development. "After three years, we saw substantial change in all districts. They came up with efficient and effective ways to position supervisors so they could fill the coaching and supporting gap."

"This new study shows us that school districts participating in the initiative could transform the principal supervisor role into a source of support for principals in leading, teaching and learning," says Jody Spiro, director of education leadership at The Wallace Foundation. "Principals felt better supported and district culture and central office changed for the better. Importantly, the study also makes clear what is needed to make this change happen."

"This new study shows us that school districts participating in the initiative could transform the principal supervisor role into a source of support for principals in leading, teaching and learning."

5 components for restructuring principal supervisor role

1. Revise supervisor's job description to focus on instructional leadership: Districts worked with stakeholders to revise the supervisor job description to outline the new expectations for the supervisor role, which moved toward a focus on supporting and developing principals in schools and away from overseeing compliance.

"These components laid the groundwork for changes in principal supervisors' day-to-day work with principals," Goldring said. "Most principal supervisors reported they now spend the largest share of their time, 63 percent, working directly with principals, engaging in newly developed routines and practices, such as participating in classroom walkthroughs, coaching principals, leading collaborative learning and providing ongoing feedback."

2. Reduce the number of principals supervisors oversee: The supervisors in the study were initially responsible for an average of 17 principals, though some oversaw as many as 21, making it nearly impossible to meaningfully engage with them all. That number was reduced to an average of 12, with districts hiring additional supervisors. The number of supervisors who reported that they oversaw too many principals declined in every district. Supervisors created networks of principals to facilitate collaboration and learning communities.

3. Provide dedicated professional

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Such experiences could be used by educators and students to help cultivate the knowledge, skills, and dispositions that they will need to succeed in the future. Specifically, new types of supports, learning environments, and opportunities to reflect and collaborate could emerge. For example:

- New and expanded streams of data, enhanced connectivity, and new platforms for collaboration could provide learners with personal, just-in-time learning supports.
- Classmates could collaborate on challenges in simulated environments, discovering which kinds of responses and behavior yield the best outcomes.
- Individual and group project work sessions could be documented in ways that enable students to monitor their own performance data so as to cultivate self-knowledge and awareness.
- Learners could engage in virtual experiences that allow them to assume the identity of others, allowing them to walk a mile in someone else's shoes to help develop empathy and perspective taking.
- Learners and educators could layer digital information over the physical world to build context around important issues.

As education wrestles with the implications of the changing nature of work, thinking through how to leverage technologies like wearables, AR and VR for learning could be an important step in making sure learners are ready for the future of work. However, for these technologies to be used in experiences that help the development of key readiness skills, technology developers will have to think intentionally about their design with significant input from education stakeholders. Additionally, educators will need to thoughtfully consider their application, thinking critically about how and when these technologies might be employed.

For more information of how wearables augmented reality and virtual reality might for learning in the future, see KnowledgeWorks' "Leveraging Digital Depth for Responsive Learning Environments: Future Prospects for Wearables, Augmented Reality and Virtual Reality." eSN

*[**Editor's Note**: Part 2 of this series will present a frame for thinking about how to use emerging technologies like the ones in this article to create responsive learning environments.]*

Jason Swanson is the director of strategic foresight at KnowledgeWorks, where he helps lead the organizations research into the future of learning. He writes and speaks about the forces of change shaping the future of education, helping stakeholders to prepare for what is next.

Succeed

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development: Districts implemented dedicated training programs specifically designed to build supervisors' capacity in coaching and principal support and development in instruction. For many of them, it was the first time they were provided professional instruction that was crafted to their role. In spring 2017, 80 percent reported participating in such opportunities.

4. Redefine the central office's role and functions: The districts made substantial progress in restructuring central offices to better align with the revised role of supervisors. They streamlined departments, dismantled barriers that stifled communication and improved processes, resulting in better integration and collaboration across departments.

5. Develop and cultivate new supervisors: Three districts developed and implemented apprenticeship programs, serving as a key strategy for preparing school leaders for principal supervisor positions. These programs featured rigorous selection procedures and offered a mix of training sessions, individual coaching and performance feedback, mentoring from a current principal supervisor, and shadowing of central office leaders.

Facing future challenges

Other school districts can learn from this study both by seeing what is feasible—that the role can be changed—and what is challenging, Goldring believes.

"Reducing the span of control requires districts to shift spending, which was not an option for some. In addition, districts changing the supervisor's job description necessitated that they also change other central office roles, especially to figure out how to deal with some of the administrative tasks removed from supervisors' responsibility," she said. "The process required the balancing of expectations, deepening and developing effective practices for supervisors, and differentiating supports for principals."

"It's a heavy lift," Goldring adds, "but this study represents an incredibly positive example of the power of the supervisor role and a hopeful story about the power of district reform."

The next report, to be published in July 2019, will measure the Principal Supervisor Initiative's impact on principal effectiveness. The third report, to be released in December 2019, will compare principal supervision in the six districts in this study with peers in other urban districts.

The study was conducted by Vanderbilt's Ellen B. Goldring, Jason A. Grissom, Mollie Rubin, Laura K. Rogers and Michael Neel; and Mathematica Policy Research's Melissa A. Clark. eSN

Material from a press release was used in this report.

The New Librarian: How to build a face-to-face PLN in 3 easy steps

BY GE-ANNE BOLHUIS, ED.S.

By now the term professional learning network (PLN) is used very often, but much of the time it refers to the virtual type, meaning our online colleagues and networks. Being a media specialist can be a lonely profession and it's not uncommon to feel like we're siloed. As I have moved from being a classroom teacher into teacher leader positions, I've noticed it can get lonely and I find myself looking for a face-to-face tribe. Although I find this at conferences, they are infrequent and expensive.

So how can media specialists get out from the media center and network with like-minded educators without flying to ISTE or AASL? By getting involved in the "unconference" movement. Here are three different ways to do just that!

1. CoffeeEDU

I first encountered CoffeeEDU as "CoffeeCUE" and thought, "Cool. I like coffee."

Fast forward a few months and it's changed my professional life. Because of my current work, which involves working with educators in almost two dozen schools, I have a small peer group. Before moving to this position, I ran across the CoffeeEDU model and decided to attend a meetup—and instantly loved how this meetup, with no agenda or formal presentation, was more like a support group than a professional learning event. Despite that, I learned more in one hour than I had in several all-day formal sessions. I was hooked and soon organized my own local CoffeeEDU meetup closer to my home.

Every month, at CoffeeEDU, attendees get to spend time with area educators in a relaxed atmosphere away from the school and/or office. In this "safe space" we share the trials, triumphs, and tumults of our work with a group that both understands and shares the same mission. Here, I learned to cater training sessions to the trainees, not around the tool. We relish our time together as we regroup and rebuild before going back to our respective fields of battle.

Ready to host your own CoffeeEDU? It's a great way to build community at your school or to network with other media specialists and educators.

2. Edcamps

Imagine 150 to 200 teachers voluntarily coming to a professional learning opportunity on a Saturday—without pay and with no agenda. Sounds crazy? It's happening a lot.

On a larger scale, though less frequently, edcamps help us do the same as CoffeeEDU. To host an Edcamp, pick a date and bring a roll of masking tape to make a grid for sessions. Attendees post topics they're interested in on sticky notes and people learn tons from people just like you. There are no presenters at edcamps, but someone starts the conversation and others share their notes. Most formal edcamps get sponsors to host breakfast and then offer a half day or full day of learning delivered by—you guessed it—the attendees!

If you've already attended an edcamp, it may be time to organize your own.

3. Twitter

Interestingly, I discovered both of these real-life events via Twitter. Taking a few minutes a day online to catch some tweets has made a profound difference in my educational practice and brought "virtual" people into my face-to-face life. I could never have imagined how much richer my life would be from interacting, reflecting, and inviting others in. I started using Twitter by following a keynote speaker and presenter at our local state tech conference in 2009. I followed some of the people they followed and found that when I posted, a few people followed me. Today, I have more than 10,500 tweets and more than 1,500 followers.

As the saying goes, Twitter is like a waterfall—always flowing—and it's better to jump in from time to time to catch a few drops rather than trying to catch everything. I turn on notifications for the accounts and people that I really want to follow (@GoogleForEdu, my local district, our edcamp) and I participate in our state educational technology and media specialist chats, #TechTalkGA and #GaLibChat. Other than that, I just "catch what I can" and move on.

To get started on Twitter, try searching a hashtag that interests you: #edtech, #futurereadyschools, #publicschools. Alternatively, you could try a Twitter chat. Two I recommend are #edtechchat and #futurereadylibchat. This calendar lists many more chats.

Though not a face-to-face environment, Twitter is a great way to discover face-to-face meetups as these are advertised heavily through the social media platform. Many conferences and presenters run active social media accounts that invariably lead to opportunities to meet other attendees and locate like-minded individuals in your area. At a recent CoffeeEDU meetup, I realized that I had met four other attendees through social media before meeting them in real life.

Virtual (enhances) reality

Regardless of the venue, whether it's a conference, an unconference, or smaller collaborative event, it's evident that educators value and seek out face-to-face interactions. Watching our peers share their successes and having organic conversations without presenters or pretense helps all of us know that we are not alone and that we have new things to master and share. eSN

Ge-Anne Bolhuis (BOWL-house) has served as a classroom teacher, computer skills teacher, and school-level instructional technology coach. She currently serves as the instructional technology specialist and media specialist liaison for Whitfield County (GA) Schools. Online, you will find her on Twitter as @gabolhuis.

Now is the time to transform how we teach students with autism

BY DR. GREGORY FIRN

America, we may have a problem.

The CDC recently announced new prevalence rates for autism. The increase from 1 in 68 to 1 in 59 children identified as having autism spectrum disorder (ASD) is significant because we know that 95-97 percent of children with autism are being served in America's public schools.

With lifetime costs for our current school-aged population of children on the spectrum estimated at between $1.4 and $2.4 million per student, the new numbers present continuing staffing, fiscal, and in some cases facility challenges. However, this does not have to be "doom and gloom" for an already stressed educational system. This is the time for school and school system leaders to shift what they think, how hey think, and ultimately what they do to build the requisite skills, knowledge, and experiences for our students with ASD.

Over the past two years, I have dived deeply into the world of ASD. After a career in education, I was introduced to an innovative use of new technology that creates engagement, access, and opportunity for life-changing impact. When children on the spectrum learn to self-regulate in a humane and civil manner, they are empowered. Empowerment leads to building other skill sets, such as social and emotional understanding, that will assist them their entire life. To truly educate these students, educators must embrace three challenging ideas.

1. Engagement is learning.

Though it may appear as teetering on the obvious, students who are engaged learn. Children with disabilities and those with autism are no exception.

Research is replete with evidence about the power of engagement. We tend to not accept, however, that neurodiverse students, especially those with autism, can and will engage in their own learning, increase their attention and focus, and participate in meaningful learning experiences. Learning requires not only engagement but also empowerment. Empowerment comes from explaining, modeling, understanding, reinforcement, and repetition.

2. Learning is not telling.

Many subscribe to a theory and practice of "training" individuals with autism through the use of rewards and punishment. I have heard such absurd examples as rewarding time on task with pieces of bacon every 30 seconds, a piece of licorice, or a tablespoon of pudding. Withholding these "treats" has been used as punishment for not being on task or for not exhibiting the targeted behavior. This sort of operant conditioning, the foundation for behavioral modification, had its birth as a practice for training animals—not humans. Though my colleagues who subscribed to behavioral modification and the punishment and reward theory of training will fervently disagree, children with autism are uniquely human. We need to work with them as such.

Rewards and punishment do not in and of themselves create "ownership" of behavior. Haven't we learned this lesson? We're more motivated to act when the impulse comes from an internal locus of control, not because we are being told to do something.

The ability to explain a situation or context and then to visually model the targeted behavior consistently is a function of new technology. No human can repeat her/himself the exact same way, at the exact same pace, with the exact same emotion. It's impossible. This is why I believe that our facially expressive, humanoid, social robot programmed to speak slower than humans do and designed to repeat itself over and over again is a solution to the challenge of repetition, consistency, and accuracy.

3. Robots should not and will not replace teachers.

The fear that robots will replace certain human functions is real. However, when it comes to teaching students with ASD, the answer is "no way, no how!" The goal of therapy, especially using robots, is to engage, enhance, and accelerate a students' progress towards clear and appropriate human-to-human interaction.

Challenging mental models

When considering the growing population of students with autism, we must challenge our prevailing mental models. Those pictures in our minds that influence our actions, whether good, bad, or indifferent, are entrenched; and when they're challenged it brings out defensiveness, resistance, and various expressions of recalcitrant behavior.

As Senge and others have written and discussed, mental models are imperfect. They are our thinking tools we use to understand life, make decisions, and solve problems. Though they often guide our perception and behavior, we seldom see their import, accuracy, or constraint on programs and practices that don't realize the desired or expected results. Yet we continue year after year with programs and practices that in some cases work against the very outcomes we are seeking.

As we shift our mental models, we must shift the tools we use to engage learners, especially those with ASD. The technology we use with students on the spectrum must serve as a lever to help those students go further and faster. Equipping staff with the technology to engage and empower learners will help them achieve life-changing impact.

I see the next five to seven years as a tremendous opportunity for educators to step up to provide transformational learning for students on the spectrum. To do so will require several shifts in thinking and practice. School and school system leaders have some incredibly important decisions to make about whether or not their staff will

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6 things you need to know about digital badges

A quick look at what digital badges are and how they work

BY MARK OTTER

Today's classrooms use a variety of learning approaches, some formal like lectures and some informal like watching videos. As a teacher, your learning is no different and your continuing professional development (PD) should provide you with credit for both informal and formal learning. You should get credit for online chats, reading articles, and watching videos because each of these experiences provides you with the knowledge to build your teaching practice.

So, what if I told you that you could show this informal learning to your administration, colleagues, and parents? Well, you can with a digital badge. Think of them like badges earned in scouting, demonstrating a unique skill or accomplishment. You can share digital badges on your LinkedIn profile, your website, and in your email signatures so that your learning is visible for others to see and acknowledge. The people who view your badge can also see the organization who awarded the badge and what you did to earn it.

Like all good students, I'll bet you have questions. Let's see if I can answer a few of them here.

1. How does a digital badge work?

Inside each digital badge is metadata, data that provides information about your data. For example, the metadata in a digital photo tells where the photo was taken and when. With a digital badge the types of information stored includes:

- Badge name
- Badge image
- Badge description
- Badge criteria
- Earner's name
- Course title
- Issue date
- Issuer name
- Issuer description

2. What about the paper certificates I usually get for PD?

Digital badges that are awarded for PD and learning are the equivalent of a paper certificate, but can easily be shared. The metadata within the badge can tell the viewer all about your accomplishment, making it that much better than a paper certificate. And, it's easier for you to display your accomplishments and take them with you if you decide to pursue another opportunity in a different school, district, or state.

3. Are digital badges only awarded for big accomplishments?

Digital badges are available for a variety of learning and PD. Just like in scouting, you can earn badges that are part of a larger accomplishment. Some learning providers have what are called micro-credentials, and those micro-credentials can stack up to a larger credential or achievement.

4. Will my students get digital badges?

While your students probably aren't earning digital badges yet, you can bet they will at some point in their lives. Hundreds of organizations are issuing badges already, including universities like Harvard, SUNY, Northwestern and

Michigan State. And it's not just universities. Companies like Microsoft, Adobe, and Intel award digital badges as well.

5. Are digital badges only recognized in the United States?

There is a worldwide standard for digital badges. Universities and companies around the world are issuing them, ensuring that your accomplishment has meaning around the globe.

6. Why should I get a digital badge?

One of the most important reasons to start earning digital badges, besides sharing your achievements, is to set an example for your students. According to U.S. News and World Report, digital badges on a student's resume boost their employability and can help show skills that aren't typically on a school transcript. eSN

Mark Otter is chief operating officer at Participate, where he provides strategic direction and concept-to-implementation engineering for the organization's global education programs that develop globally competent teachers, students, and school leaders.

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have the tools to meet the needs of children with autism.

Dr. Ron Edmonds said it best: "We can, whenever and wherever we choose, successfully teach all children whose schooling is of interest to us. We already know more than we need to do that. Whether or not we do it must finally depend on how we feel about the fact that we haven't so far." Our students with ASD deserve our shifting our thinking to do what is good, right, and true. eSN

Dr. Gregory Firn is the chief operating officer at RoboKind. With more than 33 years of experience in education, he has done everything from teaching to running entire school districts. Dr. Firn has published several hundred research abstracts and articles on how to improve school systems, how to be a thought leader for emerging trends, and how to implement and manage project-based learning.

Admins: Here's what teachers think about professional learning

New data shows that teachers aren't always comfortable with new instructional approaches

BY LAURA ASCIONE
Managing Editor, Content Services

Teachers are overwhelmingly turning to social media and online resources to drive their own professional learning, according to new Speak Up Survey data released by Project Tomorrow on July 30.

The data gives district administrators insight into what teachers still struggle with in the classroom, as well as the professional learning approaches they say they most value.

Teachers are turning away from face-to-face professional learning conferences (47 percent did so in 2010, compared to 40 percent in 2017) and are:

- Watching videos or TED Talks (from 40 percent to 46 percent)
- Participating in webinars or online conferences (from 15 percent to 34 percent)
- Using social networks to seek help from other teachers (from 14 percent to 33 percent)
- Taking online courses on their own (from 20 percent to 23 percent)
- Using Twitter or other social media to follow education experts or other teachers (from 5 percent to 23 percent)

District administrators say the best way to improve student achievement is professional learning that focuses on enhancing teacher effectiveness. Part of that professional learning should focus on new instructional practices, because teachers are not as comfortable with all aspects of their profession.

Surveyed teachers say they are not very comfortable with certain new practices, including facilitating student collaborations using digital tools (78 percent), personalizing learning for each student (76 percent), creating project-based learning experiences for students (75 percent), and using student data to inform instructional practice (70 percent).

Administrators say that when it comes to implementing innovative classroom tools, they struggle with motivating teachers to change instructional practices (46 percent) and with staff professional development (43 percent).

Teachers want more time for collaboration and planning with peers (65 percent), along with traditional PD training (53 percent), in-school coaching (39 percent), information on classroom management strategies (32 percent), and virtual coaching (19 percent).

When it comes to teachers' PD wish lists, strategies include using technology to differentiate instruction (47 percent), using technology tools for formative assessment (29 percent), and implementing blended learning (28 percent).

Sixty-one percent of district leaders say training teachers on how to use student data is imperative, though just 25 percent of teachers share that priority.

Administrators say that when it comes to implementing innovative classroom tools, they struggle with motivating teachers to change instructional practices (46 percent) and with staff professional development (43 percent).

Level of student engagement (77 percent), classroom observations (69 percent), student feedback (62 percent), teacher buy-in for the new innovation (54 percent), and teacher feedback (53 percent) are all different areas administrators check when evaluating the success of new teaching and learning innovations.

Despite teachers' clear professional development priorities, districts continue to struggle with providing personalized professional development (66 percent); finding time for teacher professional development (58 percent); empowering teachers to be self-initiated learners (54 percent); assessing teacher skills and needs (27 percent); and evaluating ways to recognize teacher proficiency (26 percent).

Careers

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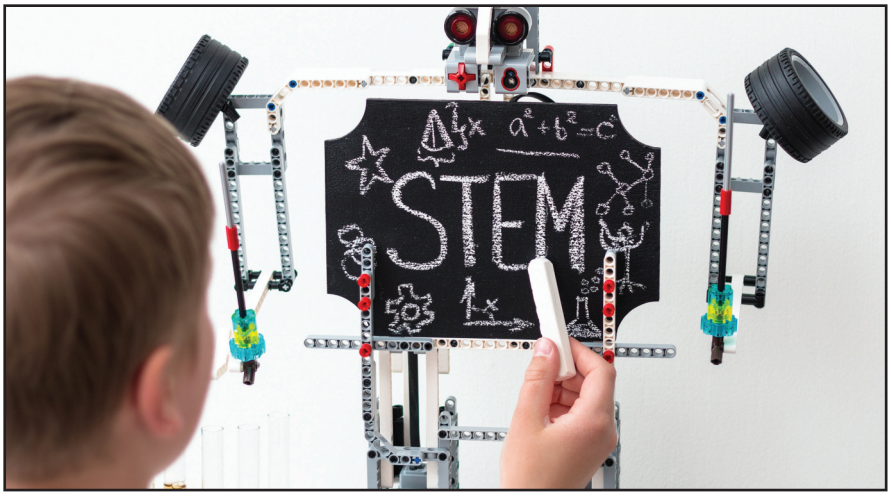
Girls' low interest in STEM education and careers isn't exactly new–by middle school, many girls lose interest in and enthusiasm for STEM subjects for a variety of reasons, including the false perception that science, math, and technology classes aren't "cool," as well as a lack of female representation in STEM professions. Still, many initiatives and schools are working to combat this trend.

Project-based learning (PBL) might be one way to increase students' interest in STEM, according to Texas educator George Hademenos. PBL's student-centered investigation helps students develop creativity and problem-solving and is ideally suited for STEM-centered challenges.

Students are naturally inquisitive, but they need some support. Pointing them to role models in the STEM industry, making STEM topics exciting, making sure teachers have high-quality training and support, and involving parents are all strategies to increase STEM interest, according to Erika Angle, founder of Science from Scientists, a nonprofit focusing on STEM education for elementary and middle school students.

Desire for careers in the arts fell as well, from 18 percent among all surveyed students to 13 percent this year.



More students expect to take out loans to pay for higher education–last year, 33 percent of students knew they would rely on loans, and this year, 45 percent of students anticipate taking out a student loan.

With more focus on the return on investment–including starting salaries–students can expect to gain from their time in college, financial education is increasingly important.

Despite this need for financial awareness, the number of teens who have taken a financial readiness class decreased from 33 percent in 2017 to 28 percent in 2018. Still, 81 percent of teens say they would take a work/financial readiness class if it were offered to them.

According to surveyed students, their parents still hold the top spot in terms of who or what influences their choice of dream job. Parents' influence, in fact, increased from 19 percent to 28 percent since last year. Societal influences, such as social media, declined from 15 percent to 8 percent. Other sources of inspiration include teachers, courses, volunteering, and extra-curricular activities.

The two skills surveyed students say they would like to learn most to prepare for their dream jobs include technology and relationship building. Most students have an idea of what those dream jobs might be–88 percent of those surveyed say they know the kind of job they want after graduation. eSN

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