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Game Changers





2019's Most Inspiring People in Edtech

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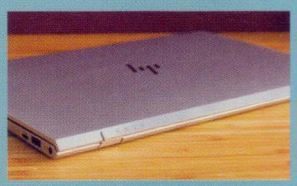

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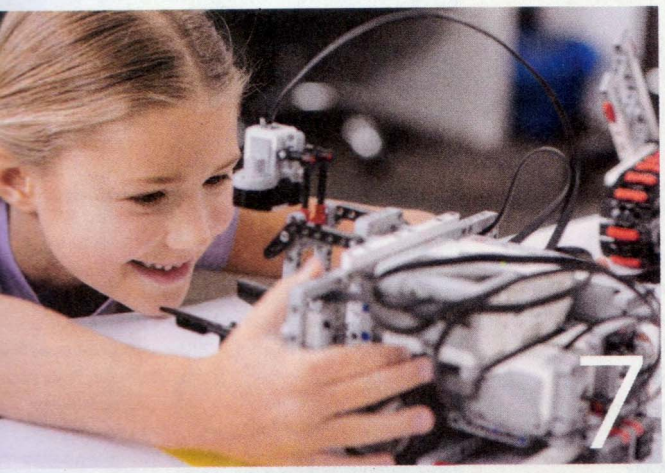

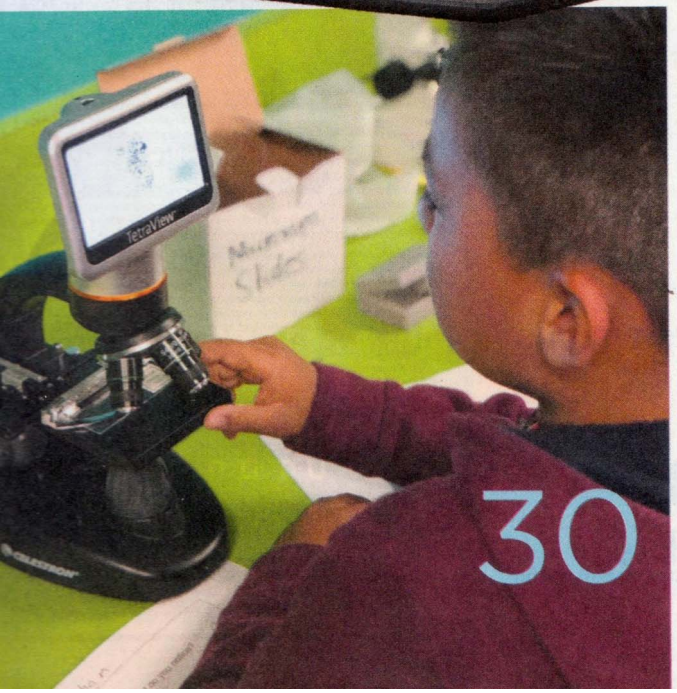

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Game Changers:
Tech & Learning's Most Inspiring in Edtech in 2019

By Sascha Zuger

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What does it mean to innovate?

According to one of its definitions in Merriam-Webster, it can mean to effect change. This year, Tech & Learning editors have selected their annual list of innovators that they believe are doing extraordinary work in the edtech space. A few may surprise you.

Davar Ardalan poses with international storytellers

Iran Davar Ardalan

Founder and Storyteller-in-Chief, IVOW

With a title like "Storyteller-in-Chief," it might seem like the founder of IVOW is all fun and games. But the brains behind this innovative cultural storytelling startup has far more serious ambitions in mind than simply spinning an entertaining tale or two.

"The hope is to generate a new conversation around intelligent inclusion," says Ardalan. "To invite the global public to share their heritage stories, and for AI developers to engage in the promise of storytelling as a tool to make AI systems more inclusive. A closer consideration of local cultures and traditions could greatly improve the ability of non-storytelling AI to respond to people's values and interests."

As a veteran journalist focused on enhancing stories by offering historical and multicultural context, Ardalan realized the gaping hole in AI algorithms could lead to a lack of clarity and true understanding in the future. She created IVOW to champion culturally conscious data strategies that would guide those in edtech, development and the business world. Her recent digital campaign asking people around the world to share their heritage stories on social media was showcased at the AI for Good Global Summit in Geneva this May.

Much of Ardalan's career in public media was spent at NPR News, though she also spent time as a writer for Hanson Robotics and was recognized with a 2017 NASA Team Leadership award for Space Apps. Far more than a dry intellectual, she received the Gracie Award from the American Women in Radio and Television and a shout-out in the popular comic strip Zippy. In May 2014, she was the recipient of a United States Ellis Island Medal of Honor for individual achievement and for promoting cultural unity.

"Today, AI systems struggle to be responsive to the values, goals, and principles of different communities. We now have too many examples of systems that reflect the biases and perspectives of the developers, rather than the people who are affected by the AI. As the daughter of an architect and a scholar, I grew up appreciating culture and history. I'm excited to launch into this next era of storytelling."

The Tech Rabbi entertains at ISTE

Michael Cohen

"The Tech Rabbi"

Michael Cohen, aka The Tech Rabbi, is on a mission to help young people let go of worries about being judged and develop the creative confidence they need to become challenge seekers and solution designers. Using a high-energy style, tempered with thoughtful ideas backed by measurable results, he touts a program that focuses on student empowerment and choice while challenging learners with academic rigor. This heady mix of discovery, risk taking, and reflection encourages not only students but also the educators who guide their learning.

"Creativity is a mindset that anyone can develop and grow," says Cohen. "Creativity is about seeing the world differently. It's about coming up with unconventional ways to express ideas and solve 'impossible' problems. Creativity is within reach for everyone."

A self-described "creativity instigator," Cohen is a keynote darling, strolling out to an infectious Michael Franti "walk-out song." He's entertained and inspired audiences around the world and has taken the stage at ISTE, SXSW EDU, Congreso Mexico, EdTech-Teacher Summits, and Apple Education events. Cohen works with schools to help them create and refine opportunities for students to leverage technology, media creation, and digital age skills. He helped one school, which housed only a simple computer lab, to become an Apple Distinguished School in just three short years.

His aim is to encourage intellectual curiosity and foster inquiry with an eye to finding solutions to global education challenges. He currently serves as the Director of Innovation at Yeshiva University of Los Angeles Boys High School (YULA), where he manages and teaches at the Schlesinger STEAM and Entrepreneurship Center. Cohen's book, Educated by Design, outlines principles for revealing and nurturing an innate creative courage and capacity in learners of all ages.

Professor Larry Hedges at awards ceremony

Professor Larry Hedges

Yidan Prize Laureate for Education Research

The Yidan Prize—the world's largest award in education—is now entering its third year. The gold medal and HK$30 million (roughly 3.8 million US, half cash/half project fund) is certainly impressive, but perhaps even more valuable is the ability to establish a platform for the global community to engage in conversation around education. The 2019 summit was attended by over 400 delegates from six continents. Out of 1,000 worthy nominations from over 92 countries, Professor Larry Hedges stood out, earning him the Yidan Prize for Education Research.

"I have seen firsthand the power education has to change lives, so I am excited to pursue new research and methods to better understand how we can help students learn better, teachers to teach better, and schools to become more effective," says Professor Hedges. "It's important that we avoid any mistakes that can be used to discredit education science, because there are people who would prefer to make policy decisions on the basis of preferences and superstitions and prejudices rather than on the basis of evidence."

Hedges, the chair of the Department of Statistics at Northwestern University in Chicago, is renowned for his development of the statistical methods for meta-analysis (SMMS), which can be applied in social science, medical science, and biological science. In short, he created an innovative, scientifically sound way to analyze research to demonstrate "what works" in the field of education. This evidence-based approach will serve future generations.

"Larry Hedges has given us new glasses for seeing what works in education. It's hard to improve what we cannot see and measure," says Andreas Schleicher, Head of the Yidan Prize Judging Panel. "Education Research provides a way to base educational improvements on scientific evidence. As we live in a time when misinformation is rife, and the quantity of available data is almost infinite, this work couldn't come at a more critical time."

Professor Larry Hedges is one of the most influential applied statisticians in the world. He has authored or co-authored ten books and was nominated by President Barack Obama to the Board of Directors of the National Board for Education Sciences, confirmed by the US Senate in June 2012, and was elected Chair of the Board in 2016.

Milo's engages students more than 87% of the time when used in concert with a therapist, as opposed to 3% for traditional therapy.

Milo works with students with autism to improve eye contact, communication and social behaviors.

Milo and Nao

Humanoid Robots

Milo is quite the engaging robot. He walks and talks, but perhaps most importantly to his young student friends with Autism Spectrum Disorder, Milo can also laugh, smile, frown, or appear surprised. His expressive face helps those with ASD practice a challenging concept: reading and connecting with the emotions of others. The child-sized robot with his predictable voice (designed by a Harvard lab and running at an ASD-ideal 82% speed) offers a human-like experience, without the intimidating experience some children can feel from connecting with actual adults and teachers.

Milo can help with a variety of social skills lessons. Milo and the student might interact one-to-one, with a teacher or therapist present to help with any hurdles. Milo can demonstrate an emotion in 3D that the child is viewing on the accompanying video. A student might be asked to identify the emotion Milo is showing by tapping the corresponding choice on a tablet or iPad. A chest monitor that records the child's heart rate changes and cameras behind Milo's eyes record data and feedback. Milo can increase the level of challenge of the exercises as the child masters them.

These features and exercises can help kids develop and practice critical social skills, offering parents and teachers evidence-based analysis to help guide lessons and assess progress. This can help learners improve their social and behavioral skills and gain the confidence they need to succeed academically and socially in a non-threatening environment.

Milo's distant cousin Nao, created in 2006 by Aldebaran Robotics, has been used as an educational tool in a research setting to help children with autism. But unlike affable Milo, Nao has an expressionless face so children can self-interpret his responses as they please.

Student Entrepreneurs Pitch Business Ideas to Investors

By Annie Galvin Teich

Mountain Brook High School is the first school in Alabama to launch an entrepreneurship curriculum where juniors and seniors form teams to create a new product or service. The school adopted INCubatoredu, a full-year course where students build actual businesses. During the year-long process, students learn many of the skills crucial to building a successful business: collaboration, critical thinking, problem solving, and creativity. The class is an elective offered through the business department.

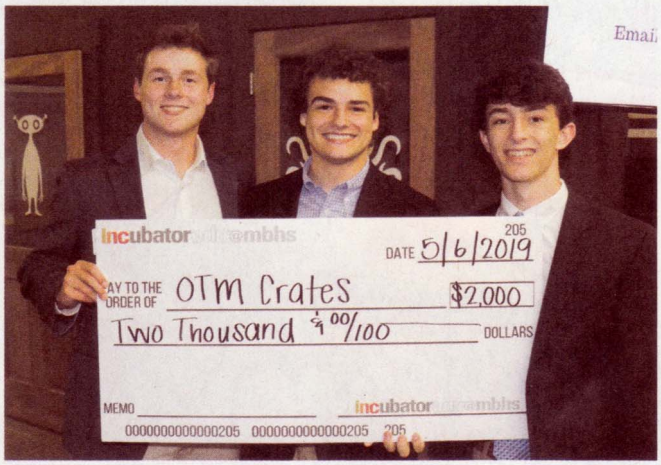
The goal of INCubatoredu is to provide students with an authentic learning experience through entrepreneurship. Real-world entrepreneurs and business experts guide students through the process of ideation, market research, and business plan development. Throughout the year, student teams also learn about marketing, accounting, and the legal aspects of launching a business. At the end of the year, students have the opportunity to pitch their business idea to real investors for funding to turn their idea into a reality.

Each team developed a focused experiment to test their riskiest business assumptions. These experiments are called Minimum Viable Product Tests (MVP Tests) and are common in the incubator and start-up world. Six teams of students presented their MVP pitches to the panel of "sharks" in hopes of receiving advice and an investment in their business idea.

Student "founders" developed ideas for a wide range of businesses, including:

- A concierge connection platform enabling venues to find musicians. (C4)
- A service that connects customers with local businesses and provides deals. (Darts)
- A clip-on aglet that provides consumers a quick, easy, and affordable way to shorten shoelaces. (Lace-Mate)
- A tutoring platform connecting high-school students to local peers and professional tutors with the click of a button. (Link)
- A multipurpose tailgating trailer hitch accessory with a built-in grill, cooler, and a sturdy table for tailgating or camping. (Omni Hitch)
- A quarterly subscription crate filled with high-school sports apparel items and more. In addition to linking high-school athletes with younger athletes, 10 percent of earnings would be donated to the school. (Over the Mountain Crates)

The Board of Advisors questions a team during the final pitch session.



Smiles from the OTM Crates team with their investment check.

On the evening of May 6, 2019, student entrepreneurs presented their final business concepts to a panel of industry experts in an exciting competition for funding. A Board of Advisors comprised of local business leaders facilitated the event by asking each team a series of questions to determine whether their business concept was worthy of investment.

"One of our goals for the program was for students to learn how to fail, pivot, and persevere to come up with a better way to approach the problem or market," says Brooke Hawkins, lead teacher for the course. "Our students loved the course and the final pitch event. I've never seen them smile as much as they did on pitch night."

Two of the six teams won investment from the Final Pitch Night. Over the Mountain Crates won $2,000 in funding to be used, in part, to develop a fully functioning website in anticipation of launching their crates in the fall of 2019. Lace-Mate walked away with $8,000 in funding. This team will use a portion of the funds to create a mold to be used in the 3D printing of their specialty aglet. Mentors will stay with these two teams as they push their ideas to the next level. In addition, one of the winning teams will be nominated to compete for additional funding at the National INCubatoredu Student Pitch competition this summer in Chicago.

A Q&A with Future Ready Superintendent Michael McCormick

Val Verde (CA) Unified School District

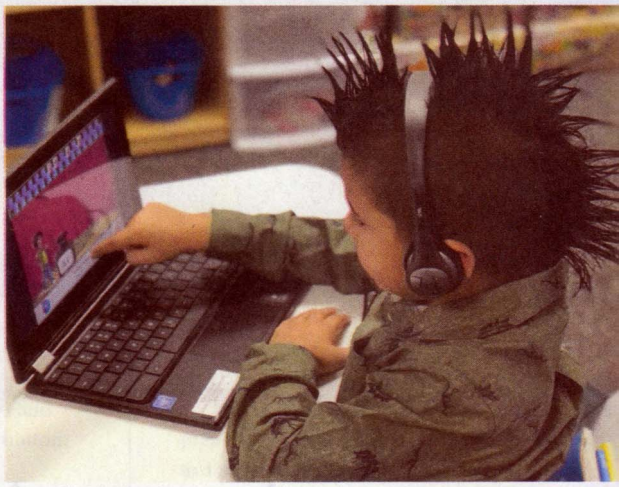
By Tara Smith

What does it mean to be "Future Ready" in your context at Val Verde?

We have a diverse population of scholars, many of whom will be first-generation college students. In our mixed suburban and rural district, 22 schools serve over 20,000 students. About a quarter are ESL students and 85 percent qualify for free or reduced lunch, and we have a 93.2 percent cohort graduation rate. I've been in the district for 20 years and have been superintendent for four. The "Portrait of a Graduate" serves as our North Star, and it's rewarding to see the educational initiatives we started ten years ago coming to fruition.

If our kindergarten students, the class of 2035, have the 4Cs (communication, collaboration, creativity, and critical thinking) plus flexibility, as well as subject-matter competency, they'll be successful regardless of the jobs they choose. Even our youngest students are engaged in critical thinking, making sound decisions and choices as they identify and solve authentic problems.

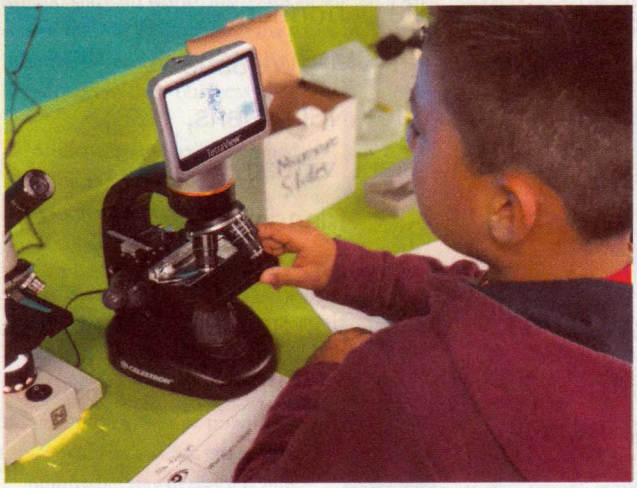
Every year, we take groups to Google so they can see what a 21st-century work environment looks like, and we take students on college visits as well. This exposure is part of a community-wide vision to help these first-generation college students imagine themselves in these places.



An elementary student at Val Verde (CA) Unified School District engages in learning with his Chromebook.

What does the Future Ready framework look like in practice for you as a superintendent?

The Future Ready Pledge reinforces the road ahead and provides a nice framework to guide our work. A big part of being Future Ready is this idea of a shared vision. Through community surveys, town hall meetings, and connecting with the business community we've been able to share our initiatives and build support.



An elementary student at Val Verde (CA) Unified School District engages in science learning.

At our annual Explore Fair, students demonstrate projects and skills in diverse areas—including agriculture, marketing, filmmaking, and coding. Students are excited to share what they've learned with an authentic audience. I love learning how to code from kindergartners!

Once our 1:1 initiative was complete, we began the process of reimagining our obsolete computer labs. Now every school has a beautiful STEAM lab equipped with tools like interactive displays, LEGOs, Spheros, and green screens. Each school chose its color scheme, flooring, and focus so each lab reflects the unique character of that school. One is focused on culinary arts, another on computer science and robotics, another on soil science and gardening. These spaces give kids the chance to explore, build and work together.

These labs also help facilitate this shift in teaching and learning and inspire teachers to think differently about pedagogy and about art-

TECHNOLOGY OUTREACH TO STUDENTS IN NEED

When the Paradise USD buildings were destroyed in the Camp Fire, we were able to donate 2,000 surplus Chromebooks so students could still access education. We need to think differently about how students receive information. Through the power of technology, these students were able to continue to learn.

fully braiding STEAM into the Common Core Standards. We approach the tension between compliance and innovation by being thoughtful and efficient in compliance so we can innovate. The kids can be confident scholars and engage in learning activities they love.

A BrightBytes survey revealed that a full 86 percent of our teachers believe that technology in the classroom enhances learning. Instructional coaches and PLCs with grade-level teams provide ongoing coaching and daily support for teachers with this deep implementation of technology in the classroom.

We use social media to highlight the transformation process in our schools. When we visit classrooms, we take pictures of the great things happening and post them to reinforce what we want to see. Teachers and principals are doing that now too, and that positive reinforcement is exponential.

What lessons have you learned that you can share with others in your position?

We built a robust infrastructure before adding devices and built a refresh into our budget to replace 25 percent of our Chromebook inventory every year. Our graduates can buy their devices for a minimal fee and we're able to deploy the latest devices for students.

Students at Val Verde (CA) Unified School District creating in a STEAM lab.

We also decentralized our IT structures. Nothing kills an initiative faster than a teacher having to stop and fill out a help ticket. There are at least two trained tech integration specialists in each school. These teachers give just-in-time support to their colleagues and are also bringing great ideas back to us. We streamlined our Chromebook repair process with a software solution running on a touchscreen computer in every library that scans the device's barcode and generates a work order. Teams of middle-school students are trained to repair keyboards and screens—and they learn customer service as well.

Our next project is to replace classroom furniture. We set up a model classroom so people could visit, ask questions, and vote. Schools chose their own colors and configurations. It's important to know when to let go of certain decisions so people can have ownership and agency.

When we see the enthusiasm in the kids' eyes, we know we're on the right track.

TECH & LEARNING LEADER

EXECUTIVE BRIEFING

The latest in edtech news curated by Tech & Learning Leader editor Annie Galvin Teich

1 Immersive Media and Child Development: Synthesis of a Cross- Sectoral Meeting on Virtual, Augmented, and Mixed Reality and Young Children

New research from the Joan Cooney Center at Sesame Workshop addresses the future of childhood and immersive media. Sixty leading experts came together to think critically about the future of childhood and the importance of immersive media in education, play, and everyday life. The visions of the future the group shared embraced the power of these media to reduce the digital divide, create more equitable environments, and empower young children. Immersive media is defined to specifically refer to the content, software, and hardware associated with augmented reality (AR), virtual reality (VR), mixed reality (MR), and cross reality (XR). As a community of designers, developers, researchers, doctors, educators, policymakers, and practitioners, they started conversations about shaping a future for children that is aspirational but achievable. Still, the considerations regarding design, research, policy, advocacy, and funding that emerged at the meeting merely introduce the beginning of the work that must ensue. Now is the time to ensure that when children engage with immersive media in their near and distant future, individually and collectively, their experiences will be positive, productive, and safe.

2 K–12 Professional Development Is Critical, So Make It Count

Personalization, coaching, and flexibility help teachers get the most out of coaching on educational technology. With one estimate indicating as many as 77% of jobs will require some degree of technological skill by 2020, it's critical that students are comfortable using technology. Yet only 10% of educators, who are responsible for preparing students for that future workforce, feel confident teaching higher-level tech skills, according to a 2018 PwC survey. Of the more than 2,000 K–12 educators who participated in the PwC survey, 79% said they want more training focused on helping them effectively teach technology-related subjects. Other educators desire more hands-on instruction: 33% said a lack of PD had hindered their ability to use technology in the classroom, according to a 2018 Houghton Mifflin Harcourt report. After a pilot program in 2017–2018, sponsored by Digital Promise, 60% of the teachers who had been paired with instructional coaches reported progress in their ability to use technology in their teaching practice. Eighty-nine percent said that the coaching improved their ability to choose the most effective tech tools, and 77% said they felt better able to communicate with students in a way that resonated.

GETTY IMAGES/MONKEYBUSINESSIMAGES

3 CoSN Releases Cost Calculators for K–12 Interoperability Projects

The K–12 advocacy group has made two new tools available through its Interoperability Standards initiative to eliminate confusion about how much money and effort a district's IT office can expect to incur for a given interoperability project. One tool is an online calculator, developed with help from Double Line, an education data management company, and the other tool is a downloadable spreadsheet template that helps users calculate project costs and staffing hours. Success with interoperability has seen a steady rise in K–12 school districts in recent years. CoSN's 2019 K–12 IT Leadership Survey Report shows that the number of districts reporting either partial or completed interoperability projects rose to 69%, compared to 62% the previous year. "In many districts it has proved an insurmountable challenge because they don't have a lot of technical expertise typically," says Keith Kruger, CoSN's CEO. "The real cost of lack of interoperability is often hidden." Krueger says that, armed with this information and the data that districts can gather through CoSN's new calculators, administrators will be able to make stronger business cases as they advocate for their technology needs.

4 Five Perspectives for Leadership Success

In a recent issue of ASCD Express, editors shared an article by Cathy A. Toll on her experience coaching school leaders. She maintains that new school leaders typically start out full of enthusiasm, but at some point in the first year they often find themselves disappointed, exhausted, and full of self-doubt. Reflecting on the following perspectives can make the difference in the success of school leaders, old and new.

- Teachers are well-intentioned, hard-working people who care about students. The leader's job is to help teachers figure out what is getting in their way and keeping them from success.
- It's not about information. By focusing on the teacher's care for their students, leaders start with what drives most teachers to pay attention and to open up to the ideas of others.
- Everyone has their own vision of success. Savvy leaders pay close attention to what's happening in the school and then guide the staff in developing a vision that reflects the priorities and passions of those who work and learn there.
- Resistance makes perfect sense to the person who's resisting. Effective leaders tune in so they can better understand what teachers are really thinking. This process has the potential to create a productive dialogue, enabling teachers and leaders to approach problem solving and planning together.
- Every situation is best approached by listening first. Solutions are nearly always better when leaders have help in choosing a path, and those who were involved in developing a plan are more likely to be enthusiastic about implementing it.