SCHOOL LEADERS NOW PRESENTS:

7 WAYS **SCHOOLS WILL CHANGE** BY 2020

SCHOOL LEADERS NOW

#1 VIRTUAL REALITY WILL BE AN EVERYDAY TEACHING TOOL.

"Students love it. The lessons really come alive. They keep going with inquiry work and unpack the learning for themselves."

Perhaps, the hottest trend this year—the one we can't stop thinking about—is virtual reality. Numerous companies are offering VR devices, from Google's low-cost Cardboard to Samsung's comfy headset. NMC/CoSN Horizon Report recently called VR an important development that schools will implement widely in two to three years. But is this an effective tool you need to buy for classrooms, or just another fad that will be quickly forgotten?

We had our doubts at first, but seeing the gear and software, and then talking to Plainview-Old Bethpage, New York, Deputy Superintendent Jill Gierasch, we realized VR can be a game-changer in the classroom. Gierasch's district of eight schools and 5,200 students on Long Island uses two types of VR with students from elementary school to high school. The teachers have planned new lessons around VR. But the biggest benefits of the new technology, she says, is that it allows students to control their learning and to learn from their mistakes.

Putting on the 3D Glasses

Plainview-Old Bethpage started two years ago with one lab of zSpace equipment. zSpace uses a special monitor and 3D glasses to give students virtual learning experiences. In science classes, students feel as if they are reaching into the screen to disassemble a complex machine or peering inside a beating human heart. The district has added labs at both of its middle schools, its high school and this year it plans to take the labs to each of its four elementaries.

"Students love it," the deputy superintendent says. This district started using the machines for middle-school science lessons, but uses now include art, geography, math, world language and engineering. "The lessons really come alive for kids. They do more inquiry work and unpack the learning for themselves," she adds.

The district also uses Google's Cardboard, allowing students to visit various spots around the world virtually. While some teachers saw the promise of VR immediately, Gierasch admits that others needed some prodding. VR isn't a must-have tool, but it shows enough promise that it would be worth your district's time and money to investigate. The types of VR, from content to headsets, vary widely, so if you are interested, test out different devices.

#2 THE AGE OF TEXTBOOKS IS OVER. IT'S ALL DIGITAL.

"It used to be, 'Can we get by without textbooks?' Now we can't remember why we were so worried."

The digital revolution in schools started quietly in a small district in the middle of North Carolina. In 2007, the Mooresville Graded School District hired Mark Edwards as its superintendent. Edwards promptly proposed what was then a radical overhaul. He implemented two major changes: Mooresville shifted to student-centered learning and the district stopped buying textbooks. Instead of textbooks, the district bought students MacBook Airs and invested in digital content.

Results were positive and acclaim soon followed. The district's proficiency rates on state tests increased for five years in a row, while the district's graduation rate vaulted to 90 percent. The school's model drew visitors from near and far. More than 10,000 people have visited the district and President Obama chose the district's middle school to launch his ConnectED program in 2013. The waiting list sits above 500.

While Mooresville's work was ahead of the curve, Edwards points out that it is far easier today for any district to emulate this work. Look at these three key factors:

- Connectivity has improved.
- Device prices have decreased.
- The amount of quality digital content is constantly expanding.

Students are certainly on board. According to Pearson's 2015 survey, two of every three students use a laptop, notebook, Chromebook, smartphone or tablet on a daily basis.

"It used to be, 'Can we get by without textbooks?' " says Edwards, who recently left Mooresville to work at Discovery Education. "Now, we can't remember why we were worried. There's an absolute understanding, 'We can do this. It's the right direction.'"

Testing Culture is Changing

WHEN ASKED WHAT assessment changes she expects for 2017, **Questar's** Chief Assessment Officer Katie McClarty pauses. It's not that she doesn't have an answer, it's just the 2017 testing season is already beginning.

"Testing is not the type of industry that typically changes in a year," she says. "It takes multiple years of planning." Caveat aside, big changes are starting to brew in the assessment game. As states and districts have more time to digest and implement the **Every Student Succeeds Act**, McClarty sees the local control leading to teachers writing their own test questions and gaining more control over their state's standardized testing.

This should set off a chain reaction, leading to better questions, better tests, and maybe most importantly, teachers who better understand the misconceptions that lead some students to get a question wrong. This understanding can help teachers improve their teaching to avoid these gaps in the future, she says.

As for possible other changes, McClarty says more online tests will lead to different, and better, types of questions. Changes could include everything from better accommodations (i.e., text-to-speech) to constructed response questions (where students directly edit parts of a sentence).

Questar's Katie McClarty

Questar

#3 SOFT SKILLS—LEARNING HOW TO LEARN—WILL TAKE PRIORITY.

Social and emotional learning has been part of education since the earliest days of formal schooling. But as schools start to realize the power in this type of knowledge, officials have started to structure SEL to make sure it isn't just something added on whenever there is extra time. According to a 2003 study by the Collaborative for Academic, Social, and Emotional Learning, more than 200 SEL programs were used in schools that year. The number has surely increased in the intervening 14 years.

One educator who firmly believes in a formal program is David Adams, the director of social emotional learning for the Urban Assembly, a set of charter schools in New York City. He says he believes the learning demands structure, and in return he guarantees results. Adams uses a 45-minute period at Urban Assembly's high schools to teach students how to understand and manage their feelings while learning how to build positive relationships and improve their decision-making.

If you're unsure about how to achieve measurable benefits, know that Adams considers five different outcomes when assessing the progress of his program—CASEL assessment, suspension rates, attendance rates, school climate poll results and overall academic achievement.

In Adams's schools, students showed progress when assessed using a CASEL framework. Suspensions decreased nearly 40 percent, attendance went up, and a school climate poll of students and parents showed progress. Students' academic progress is up too; this year, six percent more ninth graders passed their classes than in the previous year.

Teach the Behavior You Want

SOCIAL AND EMOTIONAL learning was a hot topic in 2016, but Stephanie Jensen, the Director of Community Contacts at **Boys Town**, thinks the acceptance of the concept means even more progress is in store for schools in 2017.

If the first step was for more educators to acknowledge the importance of SEL last year, Jensen thinks the second phase to roll out this year will be a more thorough integration of these topics into everyday classes. "It can't be something we teach the first two weeks of the year and then forget," she says. "Just like academics, it needs to be interwoven throughout the year."

Jensen says SEL is also losing its stigma as something that is only taught in elementary schools. Eighty-seven percent of people are fired from jobs because of a lack of social skills, not a lack of knowledge, she adds. With more districts focusing on college and career readiness, social skills in the upper grades will be able to scaffold on top of what was taught before students reached high school.

Boys Town's Stephanie Jensen

BOYS TOWN 100 YEARS

#4

DON'T HAVE A MAKERSPACE? TIME TO MAKE ONE.

Educators are always trying to relate what they teach to real-life situations. But rarely does real life intrude into classrooms and schools as quickly and enthusiastically as it did regarding makerspaces. The first Maker Fair was held in 2006 and it was only about six years later that maker labs started turning up in little-used school spaces. From there the trend has been on a straight upward path.

The NMC/CoSN Horizon Report says that adoption of makerspaces takes one year or less, the same as online learning. And while schools across the country have been creating spaces and tying the projects into STEAM studies, the trend doesn't stop at the border. China's Ministry of Science and Technology is pushing 3D printing in its classrooms; Hong Kong's MakerBay offers a program just for students; and the Croatian Makers League has loaned 1,000 robots to 166 schools across the country.

Start Simply

If you feel behind the curve, don't despair. Colleen Graves, who's created makerspaces at two schools, cautions against focusing on fancy tools. "Talk to your community first, speak with kids and see what they want," says Graves, the librarian at Ryan High School in Denton, Texas. Students can work with paper crafting and make low-cost circuits with Makey Makey, an inexpensive tool that allows students to connect everyday objects to computer programs.

Graves, who just completed "The Big Book of Maker Space Projects" with her husband Aaron, started her first space in a middle school. There her students created games using Scratch, made brush-bots and created their own game controllers, among other things, during Maker Mondays. Her high school classes have focused more on Invention Literacy and building prototypes of real inventions. For example, one student built a fully functional cardboard and plastic spoon iteration that mimics a water turbine.

As for the future of makerspaces? Graves says although librarians started many of the first spaces, the trend could leave the library soon. "If you do a good job of blending the curriculum, it could end up its own class," she adds.

> Your Makerspace doesn't have to be fancy. "Talk to your community first, speak with kids and see what they really want."

#5 SCHOOLS ARE MOVING TO OPEN RESOURCES.

The transition away from textbooks might be tough, but here's why it's definitely worth it: Cost savings, the ability to pick exactly the materials you want.

There are 8 billion reasons why more schools are using open education resources in their classrooms. That's the estimated amount of money that K-12 schools spend on textbooks each year.

Making the switch isn't easy. First, most online materials have to be used on some type of device. That means your district needs a strong 1:1 program and reliable wifi. Second, you have to find the right materials for your district. Out of a sea of at least 18 million resources, the search can be overwhelming. And the biggest factor of all: the mindset shift your staff will need to make.

The transition away from textbooks might be tough, but it's worth it and here's why: Cost savings, the ability to pick exactly the materials you want and also to have your staff mold the content to fit your needs. Furthermore, if your staff does customize materials for your district, your teachers will know this material better than they ever knew the content in Chapter 3. Now you understand the promise of OERs.

OER curricula ranges from something as ubiquitous as Khan Academy to something as complete as EngageNY, an entire preK-12 curricula for math and ELA. The creation of Engage, completed by the New York State Education Department using Race to the Top funds, "was a bit of a tipping point. It showed the possibility of what OER could be," says Andrew Marcinek. He's the chief information officer at Worcester Academy, and before that he was the open education advisor for the DOE. These materials have been downloaded 20 million times since being created in 2011. Districts as far flung as California, Louisiana, Illinois, Washington and Arizona are using Engage.

If that's not enough momentum, the movement has backers like the DOE, Microsoft and Amazon. The DOE created a #GoOpen movement, trumpeting the work of districts that are ahead of the curve. Microsoft created a learning-tools interoperability app that allows educators to access OERs directly from their learning management systems. Amazon rolled out Amazon Inspire earlier this year, a free site that uses the retailer's powerful recommendation engine to list and rank lesson plans.

#6 THE 'EVERY STUDENT SUCCEEDS ACT' IS HERE. STAY ON TOP OF IT.

President Trump is taking over the executive branch; everybody's asking what's going to happen with K–12 education? No matter how many times you hear this panicky question, the likely answer is possibly: not much. And if changes are in store, it could be a while before they play out.

Simply put, the Every Student Succeeds Act passed with bi-partisan support right before the start of 2016. The new law returns more power to states and school districts. This won't change.

"[The Trump administration] doesn't need to do a whole lot other than implement the law as it was written," said David Cleary, the majority staff director of the Senate and chief of staff to Senator Lamar Alexander.

But because the law is still being implemented, there are some items that need your attention. First, be aware of how your state is proposing to meet the new law's requirements. Each state is different. Secondly, keep track of any regulations for ESSA that the Trump team either eliminates or rewrites. The new Secretary of Education will probably wash away any regulations written during John King's tenure at the DOE. If there's uncertainty about the law, for instance in how to evaluate teachers or use alternative assessments, make your voice heard in your state to try to drive the conversation to an outcome that you believe will benefit your schools.

The larger concern, of course, is funding. Because Trump at times has threatened to eliminate the Department of Education, most experts are expecting him to shrink the department's budget. The consensus of insiders is that the DOE will remain, even if smaller or less well-funded.

President Trump's promise to allocate $20 billion for school choice likely means he will try to release Title 1 restrictions and allow money to be used for charters. This might be more difficult to do than it appears; House Republicans defeated a private school voucher plan when considering ESSA last year.

> First of all, find out how your state is proposing to meet the new law's requirements. Each state is different.

Learning Gets Personal

WITH ALL THE UNCERTAINTY around how states and school districts will implement the Every Student Succeeds Act, it's instructive to find out how a company that specializes in assessment is preparing for the new year.

ACT Aspire creates summative, interim, and classroom tests that can chart your students' growth from third grade through early high school to determine the individual student's college and career readiness. Despite the uncertainty, the company is strengthening the predictive nature of its assessments, says Andy Frost, the company's vice president of business development. "We're connecting our interim and summative tests and connecting both of them to resources that exist in the classroom," Frost adds.

The new company, formed in 2013 as a joint venture between **ACT** and **Pearson**, is also boosting its connection to open education resources by purchasing **Open Ed**, a company that offers assessments, videos, games, and homework aligned to standards. "We want to make our assessments have more meaning for teachers and curriculum leaders," Frost says.

ACT Aspire's Andy Frost

ACT Aspire

#7 REINVENTING THE WHOLE IDEA OF "SCHOOL."

If you've ever had an idea for your school that seemed too far out, now is the time to try it.

There's a high school in Salt Lake City where students have total control over what they learn, setting the time, path, and pace of their education. More than 2,000 schools now have extended hours where students can get both the core subject instruction they need as well as time spent doing crafts and hands-on projects. And in a couple of really small schools, former Google executive Max Ventilla is testing how total student engagement can alter learning.

If you don't believe that new school models are popping up every day, and in any location, consider the XQ: The Super School Project. Headed by Laurene Powell Jobs, the nonprofit promised $10 million to five school redesign plans. It expected about 50 applicants. It received 696 and the quality was so impressive that it decided to fund 10 projects at $10 million each.

So yes, innovation is alive and well in U.S. schools. What does that mean for you? Two things. If you've ever had an idea for your school that seemed too far out, now is the time to try it. If you don't have a pie-in-the-sky idea, just look over the dozens of examples out there and see if any aspects would work for you.

Remember, the original goal of charter schools was to imagine what innovations could be conceived outside typical school structures, and to then try to scale the winning ideas across our public schools. While that relationship model hasn't taken over, changes in school models seem to be at an all-time high. Take advantage of the public's appetite for change paired with real-world examples and hard data from across the country to improve your schools.

Increasing Student Choice in Minnesota

THE SOUTH CENTRAL Service Cooperative in Minnesota was already providing its members with online and blended learning opportunities for students, but the team knew personalized learning was becoming one of the hottest trends in education today. So David Paschke, the SOCRATES managing director, took the program's health science class content and made it more adaptive by using **Dimensional Learning Solutions**.

While students already completed some work in hospitals and clinics, the shift with Dimensional allowed students more control in the classroom. "The program learns what student strengths and weaknesses are. Reteaching is automatic and feedback is given immediately." The program also allows Paschke to add more simulations to his course, increasing student options.

With 55 students going through the reworked course for the first time this year, Paschke says it's too early for data on their work, but it's going so well he's looking to bring more courses into the new platform. "It's a work in progress, but we're very pleased," he adds.

Minnesota educator David Paschke