eSCHOOL NEWS

Technology News & Innovation in K-12 Education

Vol. 19, No. 4 | eSchoolNews.com | October/November 2016

Flipping for each grade level

An inside look at how 3 teachers personalize learning for students

By Aaron Sams and Justin Aglio

Flipped learning looks different at each level.

Although the term "flipped learning" is almost universally recognized, teachers apply it in many forms, in all grades levels, and in various school environments. If you are a teacher using flipped learning, the chances are that you share some similarities with other teachers who flip—as well as some differences. However, the major commonality among all flipped learning teachers is that every one of them is creating personal learning experiences for each student.

We asked three flipped teachers—one from an elementary school, one from a junior high,

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From white-boards to touchscreens

By Jim Culbert

We know that it's no longer possible to prepare students for the real world and provide an excellent education without integrating technology into the classroom.

At Duval County Public Schools (DCPS) in Jacksonville, Florida—the 20th largest school district in the nation—our mission is to

Touchscreens page 24

6 tips for leading change

The leadership strategies driving new education models

By Julia Freeland Fisher

Earlier this year, the Rhode Island-based Highlander Institute and the Clayton Christensen Institute teamed up to bring together a conference on blended and personalized learning in Providence. The goal of the event was to focus on the practical elements of blended and personalized learning by surfacing the tactics that practitioners were deploying in the trenches. More than 100 teachers and leaders from around the country were invited to share their approaches to piloting and scaling blended learning in classrooms and schools, which my organization, the Clayton Christensen Institute, summarized in a new report, called From the Frontlines.

Although our many presenters hailed from a variety of geographies and contexts, one

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Why my classroom looks like the real world

An elementary classroom simulates real life and saw test scores soar

By Anthony Johnson

Think about the jobs in today's economy—the ones we're supposed to prepare students for after graduation. Are employees evaluated using bubble-in tests to prove they know the ins and outs of their job? Do they learn and use new skills one at a time in a vacuum? The questions sound a bit silly until you realize too often that's what students take away from their education. Why is the culture to drill facts into students' heads just to pass a test?

Role-playing engages students in real-world concepts. (photo: GameDesk)

Just like in the real world, my students show what they can do through projects, teamwork, and research. Is it working? Well, according to state science exams, my students consistently score higher than other science classes in my district.

I've never been a big believer in teaching to a test. Indeed, since my first year in the classroom, I've used a project-based model with my science and social studies classes. On the first day of school, I issue my fifth-graders a PASSPORT (which stands for Preparing All Students for Success by Participating in an Ongoing Real-world simulation using Technology) and explain that their year-long adventure to "Johnsonville" starts today. The school year is a simulation of adulthood, where students work, create, and learn about personal finance and entrepreneurial skills. They experience real-world situations and gain insights into global affairs. Students tend to view my classroom less as a "classroom" and more as an interactive city where all projects intertwine to create an ecosystem of businesses and homes.

Each student has the opportunity to become an entrepreneur, politician, banker, and more. They are given $1,000 in Johnsonville cash to begin their lives. Students must buy a house or rent an apartment, earn wages, and manage their finances. As the children buy and sell items I donate, they learn math skills along with life lessons.

As they would in a real business, they manage a database of their clients or suppliers, create advertising plans, and track their income to ensure they are making a profit. Students even learn different levels of government and hold elections for positions of power, including president and city council. Students can also earn extra money through academic achievements and good behavior.

Here are a few reasons I believe this model works so well with students.

- **Project-based learning is relevant to students.** In Johnsonville, students explore issues like buying a home, paying rent, starting a business, and managing finances. Students see adults face these same issues and can relate what happens in Johnsonville to the real world. Relevancy makes each lesson memorable, meaning students are more likely to remember the overall concept of a lesson as opposed to memorizing facts for a test.
- **It encourages collaboration.** Desks are designed for individual students—which is why I don't have any. In my classroom you will only find tables, collaboration bars, and sofas that are perfect places for students to think creatively and problem-solve. It is important that students take an active part in their own learning and are able to solve problems using what they know and have learned. By using critical thinking skills to collaborate and complete performance-based lessons, my students are fully engaged throughout the entire school year.
- **Students are in control.** Other teachers trying PBL often tell me, "My kids can't do it" or "It's a lot of work." I think the real issue here is teachers not wanting to give up control of their classrooms. PBL gives me the freedom to facilitate and encourage critical thinking. Additionally, I find students work better when the teacher isn't hovering over them. PBL promotes students to think creatively and build the 21st-century skills they need to be successful in today's job market.
- **Students are using pre-built, credible, standards-aligned curriculum.** I have discovered Defined STEM is a great tool to help me create relevant

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10 ways reinventing education is like renovating your home

Why are we more realistic when renovating a house than we are with changing the way our schools work?

Peter West

Imagine that changing education to a blended paradigm is like renovating a large and much-loved home that is more than 100 years old and contains lots of wonderful memories.

Would our expectations change?

The change from traditional teaching to blended learning is the biggest change in education for over one-hundred years; it changes a core aspect of the way teachers teach. Make no mistake; this is not tinkering at the edges of education. If education was a house, it would be a fundamental refit, from the foundations to the roof. (Note that I am talking about organization-wide change, not just a few "lone innovators" operating independently in a school. That would be more like repainting a couple of rooms, in the hope that others would then follow suit, compared to a whole house renovation.)

> *It is about time we realized that the rules of life and change also apply to the move to blended learning, and planned and acted accordingly.*

Yet some expect that a whole house renovation, like whole organization change, can be done quickly and easily.

Change takes additional time, effort, resources, and planning. It usually requires extra money. It also usually involves disruption of day-to-day activities while the change is occurring. This is true in all facets of life. Why would changing an educational organization from traditional teaching to blended learning be any different?

Nobody would expect a house renovation to occur without the need for experts, a change to living conditions, a bit more mess, interruptions to daily life, finding some unexpected problems, etc. Instead, when making a large-scale renovation to a large house we:

1. Have one vision, instead of an idea of the week or every family member for him or herself.
2. Plan the updated building (possibly with an architect, design specialist, and color specialist).
3. Hire specialists (plumbers, electricians, plasterers, bricklayers, kitchen experts, etc.)
4. Expect interruptions to power, water supply, etc.
5. Understand that there will be inconvenience, such as rooms that cannot be used on occasion, dust throughout the house, etc.
6. Understand that projects often take longer than initially planned.
7. Expect that living conditions will go backward during the project, but that the long-term results will be worth it.
8. Are prepared to act in case some tradespeople are not able to produce the quality and standard of work required to complete the project successfully.
9. Get a loan or dip into savings to pay for the renovations.
10. Expect that tempers may get frayed on occasion.

People who expect that "renovating" the fabric of teaching and learning to a new paradigm is going to be different to renovating a house are fooling themselves. Do not expect that it can be done quickly, easily and without expertise, expense and tension.

Changing education across an entire organization takes years, not weeks or months. It is messy, inconvenient, and expensive. This is also true of any major change in any industry. However, the change is still worthwhile.

There is an implementation surge that must occur. It is resource intensive, a time when lots of extra resources have to be applied to the change, and it happens during the renovation. Once it is complete, things will return to normal—but a new and more effective normal different to the normal that existed before if it is done well.

This is different from the ad hoc change that can occur in organizations. If an ad hoc approach is applied to renovating a large house, the final result probably won't be pretty. In fact, the structural integrity of the house might even be compromised.

If an ad hoc approach is applied to whole organization change to blended learning, the same type of thing can occur.

I sometimes hear of people say, "I tried blended learning but it didn't work." Well, I have heard of people who have tried to renovate homes themselves and that didn't work either, but nobody was surprised, as they possibly didn't follow the steps outlined above.

As Michael Fullan points out in "Leading a Culture of Change," there is usually an "implementation dip" in performance and confidence when implementing an innovation that requires new understanding and skills. It is obvious that this is part of the process of renovating a large house; it should also be obvious in education.

It is about time we realized that the rules of life and change also apply to the move to blended learning and plan and act accordingly. It is about time we approach this major fundamental shift in the fabric of education in a mature way.

Peter West is director of eLearning at Saint Stephen's College in Australia.

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Turn your class into a Socratic seminar

Socratic seminars get students thinking critically and learning about texts

By Mary Howard

With so much talk about the Common Core standards and truly increasing our student's argumentative powers and critical thinking skills, some teachers are starting to think critically themselves about how best to engage students in thoughtful debate and discussion around texts they need to analyze anyway.

One method, called the Socratic seminar, challenges students to formal discussions about a text based on open-ended questions. Throughout the exercise, students must alternately employ good listening, critical thinking, creativity, and rhetorical prowess.

Socratic seminars push listening, thinking, creativity, and rhetorical skills.

The Socratic style of discourse lends itself quite well to establishing critical thinkers due to the fact that Socrates believed that enabling students to think for themselves was more important than filling their heads with knowledge. Even if you're new to the concept, it's easy to get started.

Select a text

To start, consider engaging the class in a guided reading of a novel with compelling themes and issues. Bullying, environmental issues, poverty, courage, scarcity, and challenges are all good topics that elicit great conversation. Throughout the course of the week, students read assigned sections of a class novel and discuss story events and critical vocabulary associated with the readings.

The questions

Provide students with a prep sheet to elicit thought-provoking questions. Students should be able to summarize the assigned section of the text, identify compelling quotes or statements from the reading, and attempt to create application and synthesis-style questions that focus on things like the critical elements, difficult choices made by characters, and sometimes controversial themes running through the novel.

The set up

Arrange your classroom in a format that encourages discourse. A double horseshoe configuration works well with a small group of students to be the inner circle. The inner-circle students will be slated to be the ones discussing and interacting. The outer circle of students will be slated to observe and reflect and provide a backchannel.

The discourse

Relinquishing control can be difficult! Once the seminar begins, discipline yourself not to guide or facilitate the conversation. Let it evolve organically. It can be awkward initially. When students realize it is their stage, they begin conversing, sharing, and engage each other in a truly critical level of analysis of a text that they've read in a deep and meaningful way.

Backchannel

One great technique to engage the outer circle is to try a backchannel technique. The website Todaysmeet.com offers a live feed of comments and questions that the outer circle of students can collaboratively create to extend the conversations and give them a voice in the process. Through Todaysmeet, students can post thoughts, questions, feedback comments, and even prompts to assist the inner circle.

Reflection/assessment

After the discussion, an assessment piece is essential. Students can write a paragraph indicating what they learned. It allows them to reflect on the experience and on their own comprehension and understanding of the critical issues that may have been brought up with respect to the themes in the novel. This reflection can also afford students another opportunity to share events that relate deeply to the characters, the character's choices, and experiences. They can also extrapolate character traits and apply them to new situations.

Enabling students through a Socratic seminar is a powerful way to build critical, active thinkers who are engaged and involved in your classroom! eSN

Mary Howard is a sixth grade teacher in Grand Island, New York teaching ELA and social studies. Mary was recently awarded the Lee M Bryant Outstanding Technology teacher of the year award for her work with the New York State Association for Computers and Technology in Education (NYSCATE).

Stretch collaboration skills with Breakout EDU

The physical and virtual escape games build valuable 21st-century skills

By Lee Araoz

There is a new platform for immersive learning games that's taking classrooms across the world by storm. Based on the same principles as interactive Escape The Room digital games—which challenge players to use their surroundings to escape a prison-like scenario—Breakout EDU is a collaborative learning experience that enhances critical thinking and creativity while fostering a growth mindset in students.

There are two types of games available for teachers to run in their classrooms: the physical games (which are the main games) use the Breakout EDU box (or any box with a hasp that can be locked) with a set of locks, and the digital games, which only need internet-connected devices.

Gameplay revolves around a Breakout EDU box that has been locked with multiple and different locks including directional locks, word locks, and number locks. After listening to a game scenario read by the teacher, students must work together to find and use clues to solve puzzles that reveal the various lock combinations before time expires (usually 45 minutes). Teachers can either purchase the Breakout EDU kit, which includes a plastic or wooden box and a set of locks, or the individual pieces of the kit can be ordered from Amazon directly. Either way, it takes about $100 to get started with the physical games; the digital games are free.

The physical games

These games require a Breakout EDU box and a set of locks that can be purchased as a kit or individually. At present, there are 60 games available on the Breakout EDU website, and more are being added each week. Teachers can select games based on the age level of students, ideal group size, and content area. There is even a template for teachers to design their own games, which can be submitted for inclusion on the site.

Most games can be set up in under 15 minutes before students enter the classroom. Each game includes physical and digital clues that help students solve

Escape games get a new upgrade.

puzzles to obtain the combinations to the assorted locks. All of these are included on the Breakout EDU game page, where they can be downloaded and printed. Additionally, overview videos are included to assist teachers with game preparation.

Game titles include:

- Dr. Johnson's Lab (Zombie Apocalypse)
- Attack of the Locks (Star Wars themed)
- The Candy Caper
- The Mighty Pen
- Teamwork

As they play these fast-paced games, students work collaboratively to find clues while using critical thinking skills and deductive reasoning to solve puzzles that reveal the lock combinations before time expires (a link to a Breakout EDU timer is included).

The same game principles from the main Breakout EDU games page apply to these games, but there is no physical component needed other than an internet-connected device, preferably a Chromebook, laptop, or desktop computer. There are 18 digital games available on the Breakout EDU Digital site, with more recently released. They range in difficulty from Level 1-10. However, these ratings are subjective, and all the digital games are quite challenging.

In these games, small groups of students search for clues in the form of hidden hyperlinks in images and text on the game webpage. These clues may lead to puzzles that when solved, reveal the combinations to assorted digital locks on the game page. However, there are "red herrings" included in each game that will lead players on a wild goose chase if followed. Students have 45 minutes to use clues found to solve the digital puzzles and find the combinations to all the locks.

A frequent response of teachers watching students working through these games is "total engagement." In fact, most students are unhappy when time expires, as they want to continue working on the puzzles. These games foster a growth mindset and a spirit of resilience is promoted because students use trial-and-error to complete the games.

It is my suggestion that educators visit the Breakout EDU site to familiarize themselves with this exciting interactive game platform. I highly recommend teachers join the Facebook page, as there is a vibrant and spirited group of game aficionados who share game ideas and links to brand new physical and digital games.

Lastly, I encourage interested teachers to play a few of the digital games themselves (either alone, with family, or other faculty members) to experience it for themselves and to discover some of the great skills their students will be sharpening. eSN

Lee Araoz is a K-12 technology coordinator, instructional coach, staff developer, speaker, and author.

Flipping

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and one from a high school—to describe what learning looks like in their world.

Beth Hobbs, third-grade teacher
Burkett Elementary, Pennsylvania

"Over the past few years, I have transformed my traditional classroom into a student-centered classroom. Through flipped learning, my students are able to complete weekly reading assignments and tasks at home to extend their learning beyond our regular curriculum.

Depending on the student's role within each task, students question each other, share an interesting part of a reading passage, provide a summary, define new words, and connect the reading to their experiences or similar stories. Students become excited to meet and discuss their novels.

Before I moved to a flipped classroom, it would take weeks to read a novel together in class, and the discussion was led and influenced greatly by what I said. By completing the assignments at home, the students are able to form their own opinions and even challenge their classmates to look at the book through different perspectives.

With the help of exciting apps such as Chatterpix, iMovie, Adobe Voice, Touchcast, and ClassFlow, students can showcase their mastery of learning through a fun outlet. Without flipped learning, it would not be possible for me to integrate the use of such engaging apps within the classroom. Flipped learning has allowed me to go outside my comfort zone and put the learning into my student's hands."

Rob Baier, seventh-grade math teacher
Fort Cherry Junior and Senior High School, Pennsylvania

"How do I flip my classroom? In years past, when I assigned problems, I always had students who forgot the lesson from that day. This year, I will assign a set of problems and attach an instructional video about the lesson. The idea is to keep the instructional video less than 4 or 5 minutes long. This allows the students to be able to get a content refresher or see if they missed something.

Another way I am flipping my classroom is by keeping up on missed school days. If I am not in school or if I am pulled for a training or meeting, I post an instructional video on Google Classroom, complete with assigned problems. The same is true for possible snow days. This allows for very little, if any, missed instruction.

If one thing is certain, the best flipped learning environments are created by teachers who are willing to learn from each other and share.

The final way I am flipping my classroom is assigning a video to watch as homework that will drive an important discussion or performance task for the next day in class.

Why do I flip my classroom? On snow days or days I am out of the building, I want my students to still be engaged in the learning process, and I want to evoke thought for future discussions. I want to cut down on the amount of direct-instruction time and increase the amount of time the students are actively learning. Gone are the days of "busy work" when a teacher misses school. Now, by flipping our classrooms, we can maximize instruction."

Kalliope Tsipras, high school math teacher
Brashear High School, Pennsylvania

"I started flipping my classroom in small bits: a lesson here or there, a three-day lesson, and then a week's worth of lessons, and so forth. Over the past summer, I decided to completely flip my pre-calculus class and focus class time on students' completely solving lots of problems, with lots of help from me.

I have come across some difficulties with implementation, such as not all of my students having access to computers each night. I have opened my classroom in the morning, during homeroom, and during lunch for students to come in and watch the videos. I created a survey for students to complete at the end of each video on Google Forms to gauge student understanding.

I have only started the process, and I am still learning, but being upfront with my students has helped. They are also willing to help with any issues that come up on the videos by emailing me and coming up to see me personally. Flipping your classroom only works if you are willing to be upfront and honest with yourself, your teaching, and your students. Also, keep your administrators in the loop, so they know what is going on in your classroom."

How will you flip?

If one thing is certain, the best flipped learning environments are created by teachers who are willing to learn from each other and share. Now that you have read three unique classroom experiences from teachers who are using flipping to improve their students' learning outcomes, where do you go from here? How do you start flipping your class today? Remember, to be a great a teacher, you don't need a Ph.D., Ed.D., or MBA. All you need is CS: Common Sense. Do what is best for students! eSN

Aaron Sams teaches and operates the education consulting firm Sams Learning Designs. Justin Aglio is the director of innovation at Montour School District in Pennsylvania.

Can your internet service provider help close the digital divide?

Internet service providers can take a leading role in helping all students achieve at-home access

By Chike Aguh

Darriale Bradley and her family spent many nights in the parking lot of fast food restaurants, but not for the food. It was for the wi-fi. For Darriale, sitting in the parking lot was the only way she could do her online homework, because she didn't have a home internet connection. No child should have to go to such lengths just to do homework, and every child should have easy and affordable access to the internet and the opportunity that access brings. Yet, sadly, Darriale is far from alone.

The digital divide is a reality for three out of four American families, meaning approximately 8 million individuals under the age of 18 are living without internet access. According to Pew Research, 79 percent of surveyed middle and high school teachers report allowing students to access homework online, with 76 percent allowing students to submit assignments online. However, only 18 percent of teachers reported the majority of students have access to the digital tools they need at home, which left those students without access to broadband at a significant disadvantage.

So, where does this leave these students and their families? In short, without an internet connection, you are both economically and educationally marginalized. Luckily, this can be solved and we, at EveryoneOn, with the help of partners, are working to help families connect to the digital world.

In our work, we hear a common refrain from parents: "We know we need internet access, but we can't afford it." In addition, there is a lack of awareness about available discounted services, and the qualification process for low-cost internet options is often long and cumbersome.

Progress against a problem as big as the digital divide demands bold, collaborative action from both the nonprofit and corporate worlds to address issues of affordability, access, equipment, and inclusive enrollment systems.

The good news? The kind of bold, collaborative work required already is happening and connecting families daily. EveryoneOn is a national nonprofit working with more than a dozen high-speed internet providers and other organizations to provide high-speed, low-cost internet, computers, and free digital literacy training for all unconnected U.S. residents.

One such opportunity for discounted internet service is available through a program called Connect2Compete, a flagship partnership that offers $10 per month at-home service to families with K-12 students who qualify for free and reduced-price school lunch programs.

And, some of these internet partners are going even further in expanding eligibility and access to affordable connections. Cox Communications is one example. It was the first company to roll out the Connect2Compete program, piloting the initiative for the FCC in San Diego, then rolling out the program nationally in 2013. The Cox offer extends Connect2Compete discounts to families with children in the Head Start and Early Head Start programs, Temporary Assistance for Needy Families (TANF), the Supplemental Nutrition Assistance Program (SNAP), National School Lunch Program (NSLP), as well as to families with K-12 students living in HUD-assisted housing, as part of the national ConnectHome initiative launched by President Obama in July 2015.

Leadership among internet service providers is critical and makes all the difference to the sustainable success of these programs. In addition to broadening eligibility requirements, Cox is committing time and resources to engage local city leadership, community nonprofits, and public housing authorities to help ensure Connect2Compete and ConnectHome programs succeed in the markets they serve. Because the families we're trying to reach do not have access at home, information needs to be provided in practical and accessible ways. That means going the extra mile to place information in bus stops, community centers—and sometimes literally placing flyers at the doorstep of public housing authority developments and hiring "street teams" to answer simple questions about how to sign up for service. The most effective supporters of Connect2Compete and ConnectHome have staff members who reach out to local families and are accountable to meeting measurable goals.

Many students lack home access.

Cox sets a good example of what needs to be done by the highest levels of corporate leadership. As a starting point, other companies must recognize the connection between digital inclu-

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The 7 keys to preparing students for the future

What should students know by the end of third grade? High school? And how do you get them there?

English and math benchmarks play a role.

By Chris Marczak

In any given third-grade classroom, you can find a student who is reading at a level far beyond their age, and another who is still working on letter recognition. How does a traditional classroom teacher with 25-30 kids manage such a wide range of students? As a district leader, how do I support our teachers and ensure that they are challenging students who are at a higher level while providing struggling students with proper support?

These are the tough questions I asked myself when taking over as superintendent of Maury County Schools in Tennessee in August 2015. Within the first few months, we ditched the old literacy model to adopt a project-based focus; deployed instructional coaches (without hiring anyone); and launched a top-down, district-level approach that quickly gained bottom-up buy-in through school and community support. We also implemented a differentiated literacy program and digital library that measures reading with reading—not quiz scores and points.

Creating the keys to success

In my first days as superintendent, I did what I called a "22in22 Tour" where I traveled to all 22 schools in my district in 22 days. I know from experience that the best leaders are the best listeners, so I made sure to take the time to hear what school leaders and classroom teachers had to say about Maury's administrative approach. I heard loud and clear that there were issues of trust, lack of resources, switching initiatives on a dime, and a need for truly aligned and supportive professional development. That's when I knew I had to eliminate the top-down approach that the district had taken in the past (and many districts employ) and go through a process to determine our Keys to Success.

Over 10 weeks, my administrative team and I asked every school board member, administrator, teacher, staff member, and parent to answer one simple question: What should students know before leaving elementary school, middle school, and high school? After making my rounds inside our school community, we asked the same question to a wide variety of community organizations including the Rotary, Kiwanis, City Council, NAACP, retired teachers' association, the County Commission, and more than 20 more groups. Here were their suggestions:

- All students' reading proficiency at or above grade level by the end of third grade
- All students' math proficiency at or above grade level by the end of the fourth grade
- All students' math and English proficiency at or above grade level by the end of sixth grade
- All students proficient in Algebra 1 by the end of eighth grade
- All students scoring at or above ACT college readiness benchmarks by graduation
- All students financially literate by graduation
- All students participating in advanced placement, dual-enrollment, industry certification, work-based learning, or military prep by graduation

By generating common goals as a community, we created a level of transparency that was new to Maury County. The keys created a common vocabulary across the entire community, so everyone was well aware of our mission as a district. For the first time in a long time, this district shifted its focus from state test scores and data to the kids and what they should be able to do to be truly college and/or career ready—the way it should be.

Putting power in the principals' hands

Just as we want our classrooms to focus on differentiated learning for students, we wanted each of our schools to create a unique plan of attack when implementing the keys to Success. We put the power in the hands of the principals (and their teachers) to choose how their schools could best address the keys.

Principals are the ones who know their students and teachers best, and therefore the best steps to take to reach our common goals. For example, students attending one school on the west side of the county have different needs than students on the other side of the district, a more urban area. A blanket plan for all schools was not going to work. Each school was empowered to create its own plan by engaging teachers and staffs into the keys' strategic planning and budget preparation; as a result, teachers entered the school year laser-focused on what they needed to do in the upcoming school year to address our keys at a classroom level. eSN

Chris Marczak, Ed.D., is superintendent of Maury County School District in Tennessee.

Leadership academies that create better principals

By Linda D. Mulvey

The city of Syracuse's public educational system, and its long-term economic health, are nearing a tipping point. According to a recent study by the Century Foundation, Syracuse has the highest rate of extreme poverty concentrated among blacks and Hispanics of the nation's 100 largest metropolitan areas.

Like many other urban school systems, Syracuse City School District (SCSD), where I serve as chief academic officer, has faced a number of challenges: Retaining teachers past their third year of teaching, too many competing initiatives that were unaligned to larger goals, and—most pressing—low academic performance among disadvantaged students.

A couple years ago, we took a fresh look into what it would take to move the needle on these enormous challenges. The research was clear: The largest non-classroom-based impact on student achievement as well as teacher retention is the effectiveness of building principals. We also recognized that school leadership is quite possibly the most difficult job to do well. We knew we had to make a substantial and systemic investment in our principals if we were going to make progress.

How we started

In 2015, we decided the best course of action was to build a series of leadership academies. We started by asking ourselves two questions.

1. What does it look like to be a great leader in Syracuse?

To answer this question, we turned to the leadership effectiveness framework we had created in 2013 with Insight Education Group. Consisting of two domains, Instructional Leadership and Organizational Leadership, the framework defines what it means to be an effective building leader at all phases of a leader's career and sets high standards for effective leadership based upon research and best practices.

We expect our leaders to exhibit effective instructional leadership, including establishing a shared vision for success and creating a culture of data-driven decision-making. In addition, they are expected to create a culture of high expectations, manage innovation, and lead with integrity and fairness.

2. What are our school leaders telling us is their greatest need?

To answer this question, we listened to our leaders. We engaged in discussions with them about their needs for long-term professional development and what it would take for them to feel supported.

Based on information gleaned from these two guiding questions, we partnered with Insight Education Group to develop unique goals and pathways to school leadership for four different stakeholder groups: aspiring leaders, vice principals, new principals, and veteran principals. While our goals for each stakeholder group differ based on each group's role, we also worked hard to have continuity so all school leaders have a common language with which to operate.

Where are we now

Our leadership academies are now monthly occurrences, and we work hard to sure that each session is:

- **Issue-based and relevant**: Our leaders engage in case studies and problem-solving protocols to address the "real" issues they face every day in our schools.
- **Data-driven:** Our leaders are required to access and analyze the data we use in our district to drive instructional decision-making and be prepared to facilitate conversations about the data.
- **Job-embedded:** In addition to our monthly academies, we provide executive coaching to our leaders to help them practice the concepts discussed during monthly academies in the daily context of their schools. Principals also meet in cohort groups with assistant superintendents.

Leadership training can pay off.

With our student population at 72 percent free and reduced lunch and speaking more than 70 languages, we have focused several sessions in each of our academies on building a positive school culture that supports all students. These sessions focus on viewing every child as an asset to the classroom and leveraging the uniqueness they bring to the school community regardless of their race, gender, or economic status.

Additionally, for our Aspiring Leaders Academy, we have added a portfolio-based assessment in which participants complete key work products related to the academy's content and then meet with a coach to review these products, receive feedback, and continue to advance them. One example of this is a video-based leadership story that each aspiring leader records and updates two to three times throughout the year. We are hoping this new structure will address the challenge of providing ongoing support beyond the monthly academies, so that the content sticks and we can realize the vision of building a pipeline of leaders through our differentiated academies. eSN

Linda D. Mulvey is chief academic officer for the Syracuse City School District in New York.

Getting struggling students to read requires data and compassion

By Tammy Mangus

When I became an administrator back in 2008, I realized there were too many students flying under the radar and not reading at their grade levels. If there's one thing I know as an educator, now a superintendent, it's that reading level defines success—period. Research shows that if a student reads on grade level, his or her likelihood of being successful dramatically increases.

Early in my educational career, I learned first-hand the impact of using student achievement data to guide my instruction, but assessment results don't tell the whole story of a student. As part of my mission to see that no student falls through the cracks, all are greater than average, and everyone graduates knowing how to read, I developed an idea called "Truthful Kindness and Necessary Action" to help me balance objective reporting and empathy for students.

The compassionate rescue

In my district, we talk a lot about being kind to students. While my teachers are extremely kind, there are situations where students are what I call "compassionately rescued" from their struggles. In other words, teachers may be allowing struggling students to slide through or rescue them from the necessary struggle of having to master key skills, when they haven't shown mastery.

Many times I find this is done out of love for the students. As a teacher, I hated to watch a student struggle to read or fail academic assessments. To save students from falling behind the rest of the class or being singled out, many teachers move them forward with the expectation that they'll catch on. Although these teachers believe they are being kind to the student at the time, this has a major impact on each student's long-term educational development.

When I was a high school English teacher, I remember one 10th-grade student who refused to participate in any sort of activity and spent classes with his head down. During a meeting with the student, I discovered the core of the issue: His reading level was way below where it should have been for a high school student. I thought, "How is it that a 10th-grade student made it all through school not being able to read?"

That school year, I worked diligently to get this student up to speed on phonics and basic reading concepts, measuring his progress on a regular basis to ensure that he was improving. By measuring his progress often and using his test scores as a benchmark, I was able to adjust my lessons to move faster through parts he understood and spend more time on concepts he had a harder time grasping. It wasn't always easy, but by the end of the school year, he caught up and was reading on grade level.

Moving from THINK to 'Truthful Kindness'

My experience with that 10th-grader inspired me to revamp the old acronym THINK (Is it True? Is it Helpful? Is it Inspiring? Is it Necessary? Is it Kind?). My goal was to help my teachers adopt the approach we call "Truthful Kindness and Necessary Action."

Truthful Kindness is a concept where teachers use data to be transparent with students and parents about where the student measures compared to state standards and class averages. Data doesn't lie when it comes to measuring if a student can read or not. Data can also tell you if a student is grasping a concept or where he or she may need additional intervention.

Keeping kindness in mind, teachers take necessary action to help each child reach his or her goals and become above average compared to standards. Instead of pushing kids along and compassionately rescuing them from their struggles, truthful kindness guides each teacher to take the time to help students become successful and meet standards before moving onto the next grade.

Students must show mastery before moving on to the next grade level.

The No. 1 goal in my district is for students to be greater than average. To ensure each student is reading at grade level by third grade, my elementary schools use a software program called Reading Horizons to build a strong phonics foundation and help struggling readers catch up.

The digital curriculum helps students learn to decode the English language using a solid set of rules. Since we adopted Reading Horizons, we've been able to collect even more data on our students and provide appropriate intervention when necessary to make sure that they are greater than average according to the standards.

The idea of Truthful Kindness and Necessary Action can be adopted in any school. I assure my teachers that if they are truthfully kind and take necessary action, they will become the inspirational teacher they aim to be. Teachers who practice truthful kindness, apply appropriate rigor to each lesson, and hold themselves accountable to the learning of each student make it possible for all students to leave our schools able to read and prepared for life. Teachers and leaders like this are the ones who get remembered. eSN

Tammy Mangus is superintendent of the Monticello Community School District in New York.

18 trends for ed-tech's future

The annual Horizon Report's key trends include collaborative learning and wearable tech

Keith Krueger

I do a lot of speaking about technology trends in education, and none of my talks seem to get larger audiences than those that address new or emerging technologies. Part of this is our never-ending interest in what is "new," and also that little voice in my head that says, "Maybe I am falling behind."

So, as an educator interested in technology—after all, you are reading eSchool News—what is the best source for tracking emerging technologies for learning? And, even more important, which of these emerging technologies addresses the chief problems you are trying to solve in your school or school district?

The answer to the first question is easy. Each year the New Media Consortium (NMC) and CoSN—the Consortium for School Networking—jointly create the Horizon Report. Produced with the insights of an international panel of experts, and with nearly 1 million downloads per year, this report on emerging technologies for learning is likely the most well-read report identifying key technology trends for primary and secondary education. (The 2016 report is made possible by Share Fair Nation at http://go.nmc.org/2016-k12). This comprehensive report helps education leaders and practitioners develop future-focused digital strategies and learning approaches that mirror the needs and skills of the real world.

The answer to the second question of what trends are most important in your school/school district requires some work on your part. While the 2016 Horizon Report identifies what leading experts see as key trends, the most important conversation to have is to see if any of those trends relate to challenges in your community. The good news is that CoSN is also issuing a new toolkit to accompany the 2016 Horizon K-12 Education Edition that will help start that conversation. Both the Horizon Report and toolkit are free.

The toolkit lays the groundwork for you to share the latest education trends and inspire progress amongst your staff and community. From start to finish, the toolkit includes templates, suggestions and guidelines for school and district communication, presentations, and guides for hosting informational events–all in an effort to simplify the process and help you maximize the visibility of the report's cutting-edge results.

So, what do the experts think are the key trends, significant challenges, and important developments in technology in K-12? Here you go:

Key Trends Accelerating K-12 Educational Technology Adoption

Long-Term trends: Driving ed-tech adoption in K-12 education for five or more years:

- Redesigning Learning Spaces
- Rethinking How Schools Work

Mid-Term trends: Driving ed-tech adoption in K-12 education for three to five years:

- Collaborative Learning
- Deeper Learning Approaches

Short-Term trends: Driving ed-tech adoption in K-12 education for one to two years:

- Coding as a Literacy
- Students as Creators

Significant Challenges Impeding K-12 Educational Technology Adoption

Solvable challenges: Those which we both understand and know how to solve:

- Authentic Learning Opportunities
- Rethinking the Roles of Teachers

Difficult challenges: Those we understand but for which solutions are elusive:

- Advancing Digital Equity
- Scaling Teaching Innovations

Wicked challenges: Those that are complex to even define, much less address:

- The Achievement Gap
- Personalizing Learning

III. Important Developments in Technology for K-12 Education

Time-to-adoption horizon: one year or less:

- Makerspaces
- Online Learning

Time-to-adoption horizon: two to three years:

- Robotics
- Virtual Reality

Time-to-adoption horizon: four to five years:

- Artificial Intelligence
- Wearable Technology

The first step to address emerging technologies for learning is to start by defining the type of learning we want. Once you've properly assessed your current situation, the next step is to look at the exciting new tools that will enable that vision. eSN

Keith Krueger is CEO of the Consortium for School Networking (CoSN).

How augmented reality enhances the classroom

At its core, AR is just a series of layers that help students make sense of the world

By David Loveland and Jim Wasserman

Several years ago, I made one of those foolish Dad choices. Despite my wife's better judgment, I let my 6- and 7-year-old sons watch *Men in Black*. What I thought would be a cool evening of fighting aliens turned into one of those nights ending with two kids afraid of going to sleep under a wife's "I told you so" glare.

Miraculously, I stumbled onto a solution when my elder son came into our bedroom around midnight saying he kept waking up scared because he was afraid a giant bugman would get him. In the moment, a solution arose. I told my son that I kept special, super strong anti-bugman powder in the bathroom, so strong it could only be used in emergencies, but that it could keep bug monsters out of the house. With that, I went into the bathroom, filled a small plastic bag with talcum powder, and spent the next 30 minutes walking around the house throwing the powder about the place while chanting "Go away bugmen!" with my son. He slept the rest of the night.

The point of the story is not about showing myself to be a good parent (I abandoned any pretense to that title when I said to my wife, "The boys might be scared at first, but by the end they'll be laughing"). What this incident demonstrates is a kind of teaching technique that too often is underutilized.

Consider when my son came into my room, professing his fear of bugmen. I could have lectured him that, in fact, there were no bugmen, and that his view did not comport with reality. This "cold water in the face" approach would have done little to alleviate my son's latent fears while demanding that he take a hard U-turn into reality while in the midst of dealing with those fears. On the other hand, denying that there might be bugs in the house at all would create an unrealistic virtual world that might have placated my son for the moment, but then be shattered by the next day's discovery of some critter.

The answer, as my half-awake mind stumbled into, was to take reality (there are bugs), take my son's perception of that reality (bugs can lead to bugmen) and move forward on that premise by adding another layer on top (there is a solution: anti-bugmen powder). Having been empowered to defeat the challenge, and having fun doing it, my son was ready later to then learn more about bugs, bugmen, and aliens as we sat together at the computer looking up such things during the next few weeks.

> *"Too much of our education system is structured like virtual reality. We create an artificial world where subjects like history, science, and physical education are separated into distinct, and unreal, classes without reference to each other."*

This approach has a name, at least in the gaming world: Augmented Reality, or AR. In AR, extra information is digitally overlaid onto the real world to enhance the experience either for information or entertainment purposes. If you have ever been to a museum and listened to a "virtual tour" on a headset while you look at the very real exhibit or pieces in front of you, then you have experienced AR. That these tours are misnamed "virtual" demonstrates the somewhat confusing, but important, distinction between "augmented reality" and "virtual reality" (VR). In a nutshell, VR creates an entirely made up world that can be as divorced from reality and its rules (like gravity) as the designer wants, while AR takes what is real and overlays information to get more out of exploring our world.

This distinction is even more pronounced and important in education. Unfortunately, too much of our education system is structured like VR. We create an artificial world where subjects like history, science, and physical education are separated into distinct, and unreal, classes without reference to each other. So too, the student's day is blocked out into delineated (and often arbitrary) chunks of time. Students are asked to read about things and solve problems that have no connection to their immediate world, such as a math/economics problem about securing a mortgage, but are expected to embrace such things because "it will be their reality in the future." Unfortunately, learning things because they will be important in the future is a poor motivator and weak sales pitch, as nearly every 20-something who has to listen to retirement investment options will tell you.

AR, on the other hand, is an approach that has endless possibilities for enhancing the motivation and actual learning for students. Starting with the world as students perceive it, the approach presents the world in a way that engages students. Once engaged, or having "bought into it" as teachers like to say, students are much more receptive to the follow-up learning that the teacher can then add on top.

A good example of AR teaching is the game, now a few years old, called GeoGuessr. With GeoGuessr, a player is placed, via their phone, tablet or computer, in some random place in the world via Google Maps. Looking around and wandering by using the arrow keys to navigate, the player looks for clues (climate, vegetation, road sign language, geographic and man-made features) to guess

where they are. Points are awarded for how close the guess is to the actual spot. The game was a hit generally, but clever educators found it a boon to their classrooms. Kids vied for the highest score, all the while learning how to look at and process information (palm trees) for application (where do palm trees grow?). Turning human and physical geography into a fun game allowed teachers to impart significant information and processing experience for students. As Mary Poppins might say, that spoonful of AR helped the learning go down.

AR also taps into an especially challenging age to teach, middle school. In elementary school (grades 1-5), students are concrete learners who pretty much take the world as the teacher presents it to them. Every parent of a child that age has heard plenty of sentences beginning with, "Teacher says …" By middle school years (grades 6-8), students start to develop abstract thought and processing. They also start to see that the world is inconsistent or not exactly how it might have been presented to them before. Not everyone is a winner, not all kids are nice, and lying is not always absolutely wrong, such as to avoid embarrassing someone.

Presented with having to cope and succeed in a potentially chaotic world, tweens try to take control of their tiny corner of individuality and seek self-empowerment. Psychologists call this the search for seriation and classification, but a lay person would observe it as a preoccupation with putting things in some sort of order, from schoolyard arguments over which is the best sports team to which people or trends are "in" and which are "out." Kids at this age also become involved with games and otherwise determining social hierarchy, from monster card games to cliquish rumor mongering on the schoolyard. Indeed, many such coping-with-chaos skills continue into adulthood, as we argue on Facebook and other social media about which people are the "good guys" and who are the "bad guys."

This is AR. We take reality, and we overlay our understanding for comprehension or entertainment value. It's also what has fueled the Pokemon Go craze, wherein people walk about the world using their devices to find and capture Pokemon that are hidden throughout our otherwise observable world.

Tech isn't required, but it can help.

So if we all do it, whether in hunting Pokemon or in analyzing the stock market or politics, why not tap into it more for education? This can be done with a few simple tweaks by the classroom teacher (while more professional AR educational programs are being developed):

1. **Start where the students are.** A teacher should not start with a "Kids know nothing" attitude. Begin with the students' perception or understanding of the concepts or situation as a base reality. What do they know about the world regarding this topic? If you give them a word, what's the first thing that comes to mind?
2. **Make education empowering for kids.** Now the kids can add a layer on top. What questions, challenges, or problems do the kids see with reality as they perceive it? What are the issues, and what can be done to solve them (a real solution and, perhaps, one crazy, fun one, too)? During this stage it is important for a teacher to not discount fun as a motivator. As stated above, future return on investment is not enough, so where is the engagement hook now for the student? Also, when making a game, it is human nature to have more fun winning than in making "everyone a winner." If a teacher is worried about wasting class time to make a lesson fun, then consider it an example of long-term investment.
3. **Finally, finish with time for the teacher to do an educational overlay.** Here is the payoff for the classroom. The kids have enjoyed their time, but now the teacher must use his or her skills to show the students how they are better prepared to meet future challenges (in gaming and the real world) from what they have previously done. Why, historically, were there so many communal clocks in old public squares (that then became Pokestops), and why do we not build them so much anymore? How did you calculate the winning strategy, and under what circumstances might that strategy be useful in the future?

In following these steps, a good teacher can create a viable AR learning environment, even perhaps with few or no electronic devices. People should remember that, while everyone oohs and ahs about the latest technology, and while technology can enhance learning, the driving engine of learning has always been, and always will be, the student's engaged and active mind.

This year may be remembered as the year AR truly came to the forefront. It is interesting that this craze has arisen amidst a summer of intense American racial strife and a divisive election. My elder son (formerly fearful of bugmen), now a college student, tells me of hundreds of people gathering in the park in Houston, hanging together, collecting, and interacting like never before. As he postulated, perhaps the players, seeing the world as so divisive, have overlaid an activity that allows more genial, cooperative existence as an AR tonic.

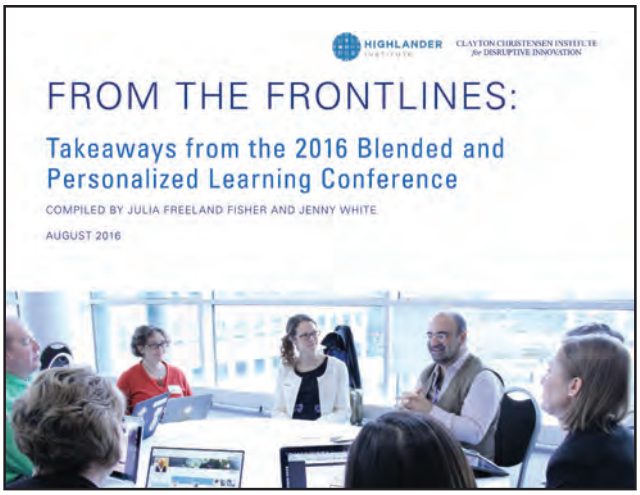
It's not a tuning out of reality, as VR might have it, but a way to take bit of control and move more freely about the noise and chaos. Perhaps, both inside and outside the classroom, AR is the talcum powder we all need. eSN

David Loveland and Jim Wasserman are currently teachers at The Parish Episcopal School in Dallas, Texas.

Change

continued from page 1

refrain echoed loudly throughout the Providence Convention Center: Implementing blended and personalized learning is about managing change. Innovators stressed that without effective change management, the best technology tools and the most elegant personalized learning models will come up short. Here are six change management strategies that practitioners stressed as vital to driving new models of learning across traditional systems:



View the full report at: www.christenseninstitute.org.

1. Embrace not knowing

One tension in managing change across a classroom or an entire district is making the unknown an opportunity rather than a threat. This framing depends on leaders who are willing to make the unknown safe. As Amanda Murphy, a Highlander Institute Fuse Rhode Island Fellow from Westerly Public Schools, put it, managing change across a system is about "supporting the eager, but non-expert." In part, this requires giving people room to express concerns. "We had faculty volunteers who were interested but didn't have expertise," she said. "They talked about why they were nervous, and this helped people understand that there were many others in the same boat. It set the tone that it's okay not to know. And now they're asking for help."

2. Co-design

All too often, new approaches to instruction are designed in isolation from the teachers who will be implementing those approaches. Participants stressed that limiting the number of seats around a blended and personalized learning design table, in turn, limits the level of teacher buy-in to new classroom models. "Leaders have ideas for teachers, but it doesn't work top-down," said Julia Rafal-Baer of Chiefs for Change, a nonprofit network of state and district education leaders. "Teachers need to be part of the strategic conversation." Leaders noted that the more teachers are involved in the design process upfront, the more likely they will be to persist and adapt when challenges to implementation inevitably arise.

3. Cultivate early adopters

Many initiatives that participants discussed came from a few early innovators trying new approaches within their systems. Early adopters of blended and personalized learning can also provide a powerful antidote to top-down directives. For example, Donna Vallese, a former principal at Nowell Leadership Academy, a public charter school in Rhode Island, said she never told teachers they had to use certain tools like Google Classroom. "Instead, it was seeded with early adopters," she said. "It spread organically from the ground up, and then everyone was doing it."

4. Open doors

Classrooms can be infamously siloed environments where teachers operate in isolation. Participants noted that for educators pursuing innovative classroom models, breaking down those silos was critical. Tracey Nangle, a teacher in North Smithfield School District in Rhode Island, said that an open-door policy at her middle school helped to shift schoolwide attitudes and culture in favor of collaborative learning. "Teachers are given release time to work as teams and observe classrooms together. It builds respect between colleagues and exposes all of the great work that is happening," Nangle said.

5. Rethink roles

As schools manage change across their instructional models, the traditional roles that adults play may shift. David Richards of Fraser Public Schools described how his district's move to competency-based learning prompted a rethinking not just of teachers' roles, but also of roles across the schools and ecosystem. "We looked at the positions we had and then abandoned them for the positions we needed," he said. Similarly, Eric Tucker of Brooklyn Lab Charter School in New York recommended using personalized learning models to move teachers away from the one-size-fits-all roles they've traditionally played. "Embrace that educators have different skills and strengths," he said.

6. Make time

Practitioners looking to adopt blended and personalized learning practices stressed that the learning curve is steep and time scarce. Yet, some school leaders are finding creative ways to give teachers and themselves more time for year-round professional growth and for adapting to new tools and techniques. For example, Scott Frauenheim shared how Distinctive Schools created an unprecedented chunk of time for peer-to-peer learning during the school day by working with a scheduling expert to update where time gets allocated each day. "We found 105 minutes of planning and collaboration time by minimizing transitions between classes. This time is helping to prevent burnout and helping teachers learn to let go of what they've always done," he said. eSN

Julia Freeland Fisher is director of education research at the Clayton Christensen Institute.

5 ways to improve your school website design

By Jovana Čenejac

These days, before visiting your campus or even speaking to anyone on the phone, the first impression anyone will ever have of your school is via its website. When researching existing schools, the majority of people will automatically undertake in-depth online research to learn more about their options. Therefore, it is crucial that your website contains enough relevant information that is eye catching and easy to navigate through so as to provide helpful information and not confuse the visitor, causing them to leave the website. After enrollment, the website will serve as a vital link for parents, students, and school administration.

Content seems to be key here, yet it is not merely enough, meaning if it is not organized in the right way, it will be difficult to find or there will be too much of it, therefore it will not serve its purpose. This is where design plays its part in providing solutions for content display and organization.

That being said, design is not something you should fear, becauseit does not present a difficult task given the development and advancement in the CMS that enable even those without much design skill to achieve great results. Yet, there are a few steps you should consider and implement if you want to maximize your website's effectiveness.

Simplify

Too often, great looking websites are ruined by unnecessary content, complicated navigation, or both. The logic behind this seems to be—the more you are displaying, the more you have to offer. Instead, you should think like the visitor to your site. Yes, beautiful visuals could grab attention for a while, but information and content are what they came for, so don't let the flashy stuff get in the way of information. Here are the most important features of a school's website that need to be simplified in order to get results.

Websites should be mobile ready.

- **Home page content**—while it is completely understandable that you want to impress your visitors into becoming future clients, your home page must not be overcrowded with useless information and too much content of any kind. With a little help from elegant WordPress LMS themes, you can have a beautiful and personalized home page and still keep it simple in terms of the content. Your home page should show a concise profile of your school, with clear and easy-to-follow links to the most important pages, such as school calendar, timetables, courses descriptions, teachers' profiles, contact page.
- **Navigation**—your website needs to have a natural flow, which means that users need to be directed to the desired pages quickly and easily so as not to get confused and eventually give up. Again, think like the visitor on your website, and place call to action banners, social media buttons, and menu bars where people expect to find them without having to spend time looking for them.
- **User integration**—the registration process as well as the login should be simple, easy, and fast in order to feel seamless for the user. If you're offering courses for purchase e on the site, you need an efficient means of handling that, too (payment systems such as PayPal and WooCommerce are integrated into every modern LMS WordPress theme).

Multimedia

When designing a school or any other website it is important to incorporate visual features, as they tend to be an efficient way into your school's presentation. Make sure to add appropriate pictures and videos that convey the right message and tell a story about your school, classes, students, and staff. Remember to place it where appropriate so as not to fit the content on the page, and do not use too many multimedia files as they can slow down website loading time.

Social media

Integrating social media buttons into the website is one of the most helpful tools to promote any shareable section of your website, such as an events page, blog posts, etc., helping you inform and interact with your followers. Moreover, it is most likely that the majority of your potential students will use social media to search for schools nearby, so make sure your profiles are neat, active, and regularly updated.

Mobile ready

As the number of people who mostly use smart phones to browse the internet is growing by the year, you want to make sure that your website has a responsive design for desktop computers and smartphones alike, in order to provide each visitor to your website with the best experience.

Personalize

Additionally, assuming you want to establish a recognizable image for your school, make sure you add personal feel to it. This means choosing LMS solutions with many custom options so that you can choose your colors and fonts; customize banners, student badges and certificates, and other features that can help you provide a unique experience to your visitors and students. eSN

Jovana Čenejac is an English teacher, translator, and copywriter.

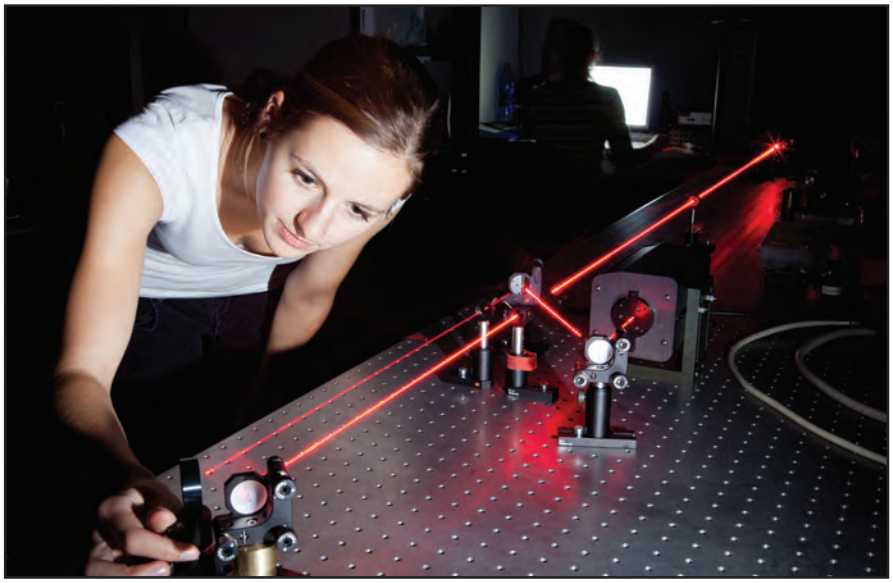
Are high schools teaching science backward?

This simple change could transform STEM achievement, and New Jersey is the proof

By Dennis Pierce

U.S. high schools are teaching science in a backward sequence of courses that is a remnant of 19th-century thinking, says former Harman executive and New Jersey Teacher of the Year Robert Goodman—and changing the order in which science courses are taken and the way they're delivered can lead to profound differences in both STEM interest and achievement.

Goodman was speaking at the Building Learning Communities (BLC) conference in Boston, organized by education thought leader Alan November. He talked about how he taught algebra-based physics to ninth-graders near Newark, N.J., most of whom came from poor families—and many of whom went on to take (and pass) the AP physics exam. His approach was so successful that it has been replicated across the state and in countries around the world.



Early exposure to physics can help with algebra and other STEM subjects.

Goodman himself never took any science beyond biology in his own high school experience. Needing to fulfill a science requirement at New York University, he took a physics course because it was the only class that fit into his schedule.

"About two weeks in, I fell in love with physics," he said. "For me, it was the thinking activity that was involved. We don't pay enough attention to that in schools—that thinking is an activity by itself."

Goodman ended up transferring and earning a physics degree from MIT. He went to work for Harman Consumer Group, a division of the audio electronics firm Harman International, and ultimately became its president. After 20 years, he decided to launch a second career as a high school teacher.

In 1999, he was asked to launch a pre-engineering program for Bergen County Technical High School, which at the time was a brand-new vocational school. The program he headed up began with 16 nint- graders.

Although Goodman had been assured they all knew algebra, it turned out only three of the 16 had taken Algebra I. Because algebra is foundational to engineering, he used his two hours of vocational time each day to create what he called an "on-ramp" to STEM success, consisting of 40 minutes of Algebra I instruction, 40 minutes of algebra-based physics, and 40 minutes of engineering.

Why physics? It's required for almost all STEM career paths, Goodman said—more than any other science subject. "It makes science make sense," he noted. Yet, less than a third of U.S. high schools even offer physics instruction—and most students (and especially poor and minority students) aren't exposed to it.

What's more, teaching physics to high school freshmen allows them to see practical uses for algebra and apply those skills to solving real problems right away.

As it happened, that was a huge benefit, because it answered the "why" question at the heart of so much of U.S. education. Once Goodman started teaching physics to ninth-graders, he no longer heard kids say, "When am I ever going to use algebra?"

The classroom that Goodman was assigned to had no desks or tables, only a few computer workstations, because it was assumed the students would be using the space to build things. So, before classes began that first year, he took some of the small round tables from a faculty lounge and rolled them down the hall to his room. He also took some chairs from the cafeteria.

"It was by pure chance, and not any desire to follow Vygotsky—but it turned out that I had created a social constructivist classroom," he said. "I taught them some content briefly for the first few minutes of class, and then the students applied this content to solving new problems they hadn't seen before, working together in small groups."

He added: "Seventy-five percent of my class was kids just discussing science. It turns out that works really well, because kids love to argue about stuff."

The combination of Goodman's pedagogical approach and the fact that stu-

dents were learning algebra and physics simultaneously made his course enormously popular. Soon, students in the school's other career and technical fields were asking administrators if they could take physics in the ninth grade—and by 2003 every freshman was taking the course.

What's more, many of these students went on to take AP physics, with a remarkable pass rate.

By 2005, the school's students were taking and passing the AP physics exam at a rate that was 13 times the state average. The percentage of students from this voced school taking AP physics was easily No. 1 in the state, more than double the next-highest school's percentage.

State leaders wanted to replicate this success throughout the state's high schools. Around the same time, the New Jersey Education Association wanted to prepare its members for the new teacher accountability measures coming down the pike. These factors led to the formation of the New Jersey Center for Teaching and Learning, a nonprofit research and development organization, and Goodman became its executive director.

"One of our goals is to get schools to stop teaching science backward," he said. "The only reason we teach biology, then chemistry, then physics is because of a decision made in the 1800s." But as Goodman proved, teaching physics while students are just learning algebra sets them up for success in all of the STEM disciplines, while making science and math more meaningful. And when students understand physics, they can explore other science topics at a level of sophistication that goes beyond simply memorizing facts.

The NJCTL also creates free and open instructional materials and trains teachers in student-centered instruction. Its training extends to schools in Africa and elsewhere, and the center also has trained 197 veteran educators to become physics teachers over the last seven years.

The approach that Goodman pioneered has led to higher participation in AP physics among minority students than the national average, helping to close the STEM achievement gap. What's more, Bergen County Technical High School is now ranked 28th in the nation and has had several students accepted into MIT. "Every single one of them was rejected by the math and science academy down the street," Goodman said.

He concluded: "I'm not saying that all of these students will become physicists. But we want every student to be able to become a doctor if they want to, for instance—and they can't do that if they never develop an interest in science." eSN

The former editor in chief of eSchool News, Dennis Pierce is now a freelance writer covering education and technology.

How to use live video in the classroom

By JR Ripton

Let's face it—we live in a very visually oriented society. Visual media is a great way to communicate, with a lot of positive applications in the classroom. Videos are attention-getters. One of the major benefits, in fact, is that everybody is familiar with video chat, thanks to smart phones and online media. It has fostered a new movement in education, led by organizations like The Global Classroom Project, to connect schools all around the globe.

New video technology is making the video chat option much more flexible and practical, too. A good mix of graphics, video chat, and interactions can deliver excellent educational values. This allows for far better discussion and communications opportunities.

Here are a few ways that you can use live video effectively in the classroom:

Expert guest speakers

A good selection of guest speakers for live video is another major asset. Experienced speakers are excellent presenters. They can bring a subject to life very easily and handle questions very effectively.

Expect also to be astonished by the range of guest speakers it is possible to bring into your classroom. It may take a little planning, but if you approach potential guest speakers through parent organizations, like NASA, colleges or community-based organizations like the Museum of Tolerance, you can actually get world-class speakers.

For academic guest speakers, it's a good idea to refer directly to their current college for help. The colleges will be able to assist directly with your needs, and are very helpful in arranging guest speakers.

Video tours and virtual ed

These options are among the very latest and perhaps the most important developments in education. Video tours allow classes to go around the world and cover a phenomenal range of subjects.

The same possible technical issues apply to this type of videoconferencing, but this is very much an investment in high-value learning. It is expected that the video tours and virtual education will progressively become part of the higher learning experience in the near future.

These options also include the opportunity to bring in experts from places like the Smithsonian, which has its own free video conference facilities. Major American colleges have similar facilities available.

Parental video chats

One of the hardest things to do as a teacher is to manage parental connections. Many parents do have perfectly legitimate reasons for not being able to attend conferences with teachers. The easy option, and certainly the cheapest and most practical option in many cases, is to introduce video chats with parents.

Again, it's important to keep an eye on the possible technological issues. If you're in a school that has older video technology, you may not be able to connect with parents who use Skype or similar video chat technology. A good, all-purpose/all-platforms video chat facility is the easy answer, as long as it can keep up with the bandwidth requirements of a modern video platform.

Video and student safety

Student safety is the top priority of any school. Students getting lost on field trips or getting separated from their group are common problems. Using video links to keep in contact with students is a very simple and very effective option. If you are trying to expose your students to new experiences, a field trip is a great idea, but if you can have the same level of experience by taking a video tour, then you eliminate the risk of a student getting lost, hurting themselves, or doing something that can cause real damage to an artifact. A great example of this is the 5,000-year-old rock carving which was destroyed when young visitors tried to "improve" it. This type of problem isn't guaranteed to occur when you take your class on a field trip, but it's one that can be avoided with the use of video instead.

A good video connection is also invaluable because it creates a sense of interactivity. You can combine the video with a "tour guide" who can answer questions and give you a close-up look into areas of an exhibit or a particular area of interest. When you have a high-quality video feed, this can even give you more detail than you would see if you were viewing the same thing in person.

Connectivity problems and the need for pre-emptive fixes

Predictably, one of the most common problems with live video in the classroom is likely to be technology, rather than people. Good connectivity and reliable streaming are the keys to success. The usual problems are network quality, lack of internet quality, and old software or hardware.

Expect these problems. Video problems are Murphy's Law at its most reliable. The best way to avoid the problems is to speak to your school's IT team about software solutions, hardware, and things like server issues that might scramble the video chat.

Schools should also consider that upgrading video software and hardware will also have added benefits throughout the school, beyond occasional video chats. Better streaming alone is a major positive upgrade. This can be easier than ever with new technologies like the one developed at video chat company Agora.io, which is designed to mitigate these connectivity issues, even in areas with poor or unreliable internet connections. If your live-streaming video is choppy and doesn't work well, it will ruin the experience for your students and waste the time for any guest speakers you may have. Mitigating these issues before they happen makes for a richer and clearer learning experience. eSN

JT Ripton is a freelance education, technology, and business writer from Tampa.

How we improved PD by failing forward

By Michele Eaton

In the Metropolitan School District of Wayne Township, there are several blended and online opportunities available for students. Perhaps the same is true in your district, but how many of those same opportunities are available to teachers as well?

Recently, the teachers in one particular program in the district inspired a personalized approach to professional development. The Ben Davis Extended Day (BDED) blended learning program is an extension of one of the district's high schools, Ben Davis High School. The program operates in the evenings and serves students who, for one reason or another, are not able to attend during the day. The students move through their courses online and at their own pace, while physically attending school in the evenings in a lab setting. There are four teachers who work in the evening and teach the courses for English, math, science, and social studies.

As part of the professional development for BDED, the teachers went through a design thinking process to develop strategies to overcome one of the teachers' main perceived issues and provide more personalized learning for students. While moving through the process to find a way to improve student engagement and consistency in effort, the group explored various strategies that could be implemented to solve the identified problem.

Each strategy was evaluated and ranked based on several characteristics (ease, training necessary, cost, predicted success, etc.). Ultimately, the teachers decided as a group to research and implement Individualized Learning Plans (ILPs) with their students. The teachers wanted to create learner profiles for each student that would be used to personalize and individualize instruction for the students.

At the time, there was no tool in the district necessarily built for this work, so the teachers at BDED did some online research to find other schools and programs implementing something similar with their students. The group studied ideas from Providence Public High School in Rhode Island, the work of Barbara Bray and Kathleen McClaskey, Maureen Devlin at Wayland Public Schools, the Open College at Kaplan University, and various other templates. Borrowing from these templates and ideas, the teachers developed their own template using the only collaborative tool they had—Google Docs.

When a personalized learning plan failed, teachers simply try, try again.

After collaboratively creating a template to use with their students, the next step was to sit down with each student and work with them to fill out the initial plan, with the intent that the ILP would not be a static document, but rather a plan the student could continue to use as they learned how to advocate for their own learning. These conversations were so beneficial. It was a great opportunity to build relationships with students and learn about their aspirations, strengths, and constraints.

Unfortunately, the success of the project went downhill after that point. The ILPs were difficult to manage for a large group. The students were not as invested in the process after the initial meeting, and most of the ILPs remained untouched in their respective Google Drive folders. With the typical teacher workload already on their shoulders, managing all of those documents and drawing students to them on a consistent basis when their students were working remotely or at different paces, became too much of a burden. After the first year of implementation, the teachers were unsuccessful in using the ILPs in a way that would increase student engagement and consistency of effort.

As the group came together to reflect on the year and their goals in regard to the Individualized Learning Plans, it would have been easy for this idea to be dismissed as a failure or waste of time. That meeting went in a different direction, though. Instead of hearing "So much for that," the teachers asked, "What can we do differently?"

This fail forward mentality is what so many teachers want of their students—to not let mistakes discourage them, but to learn and grow from them. Their students-first attitudes gave me the confidence as a professional developer to take a risk too.

At about this time, the district adopted a new learning management system (LMS). Within the platform, there is an ILP feature that can be used with staff and students. This could immediately solve one of the problems the teachers experienced. The ILP could be on the homepage of the digital environment where the students navigated to daily for the classwork.

The ability to tie it to coursework

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Touchscreens

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deliver educational excellence in each classroom and school, every day, to give all our students a chance at success. This includes using technologies to facilitate interest in learning.

Our educators had been using tools such as projectors and interactive whiteboards in classrooms for years, but there was no real across-the-board standard for our schools' core classroom equipment.

Additionally, the equipment we had was aging. Projector bulbs were starting to dim and teachers would have to turn off lights to use them, which hardly energizes students. Some of the interactive whiteboard software was out of date, and not all schools had the funding to upgrade outdated equipment.

Our superintendent, Dr. Nikolai Vitti, gave us the opportunity to put new technology in, and worked to secure the funding. This presented a two-fold challenge—update and standardize our interactive classroom technologies while being mindful of the taxpayer dollars used to fund the investment.

DCPS needed something that was easy to operate and affordable enough to be standard across all classrooms, but that was also innovative enough to change the landscape of the classroom and create a more active learning space—something that a teacher could use for the whole class as well as in small groups. After researching options to replace our somewhat outdated technology, we ultimately decided on a combination of 55- and 65-inch touchscreen displays.

Best practices

We had success using the following best practices for implementing new interactive display technologies into schools:

Keep an open mind. We asked school administrators and teachers what they were looking for in a touchscreen technology to ensure we hit the mark and narrowed it down to four vendors to make sure we had enough options to choose from. In the end, we ended up with touchscreens from NEC Display Solutions.

At DCPS, we believe that using interactive displays to facilitate learning will help us in our quest to set students up for success, giving them the best possible opportunities and new ways to learn and grow.

Ensure ease of use. The displays we chose have software built in that uses native drivers within Windows. The fact that we don't need to worry about software anymore is huge—these displays give us plug-and-play functionality, which eliminates any future issues with outdated software and the costs of upgrading.

Allow portability. Teaching doesn't only happen at the front of the classroom—it also happens on the sides and at the back. We purchased the displays bundled with media carts to make them portable, allowing them to move around classrooms as needed.

Learn from the past. Previously, our schools had been using portable interactive whiteboards, but if the boards were ever bumped or jarred, they would go out of calibration and it would take time to recalibrate them. The calibration issues were eliminated with the display and cart bundle—and we were able to use the monitors as one piece of equipment to replace both projectors and interactive whiteboards.

Test out the tech. We deployed the monitors in middle schools first, because our experience is that teachers of that population have more flexibility to change the way they do things. Middle school students can be especially restless, and we've been successfully using blended learning centers to keep them interested, giving students the opportunity to learn with the monitors as well as one on one with the teacher.

DCPS now has 2,500 interactive displays across our schools, and we plan to have an interactive display in all core classrooms in each of our 45 secondary schools for the 2016-2017 school year. So far we've tripled the number of interactive devices in student hands, thanks to our superintendent, who was supportive of our goals.

Feedback from students and teachers has been positive, and we plan to continue to grow student use of the monitors. At DCPS, we believe that using interactive displays to facilitate learning will help us in our quest to set students up for success, giving them the best possible opportunities, and new ways to learn and grow. eSN

Jim Culbert is executive director of IT for Duval County Public Schools in Florida.

7 digital resources for language learning

Digital tech lets students learn languages the way they were meant to be learned

By Lisa Rodriguez

In classrooms all across the country, old-fashioned textbooks and stodgy lesson plans are sucking the life out of language learning. These classes leave so many learners apathetic or frustrated as they recite scripted dialog or memorize an endless litany of verb conjugations. Who said that language learning had to be so boring?

These days, thanks to digital technology, we have the resources to resuscitate language learning and make it the adventure it should be.

There are many advantages to digital language learning over classroom instruction, including access to content at any time, in any location, and current technologies make content interactive, as opposed to stuffy foreign language textbooks.

One of the most popular computer-based language learning programs is **Rosetta Stone**, founded in 1992. The program includes 28 languages and can be purchased in CD-ROM format, downloaded, or subscribed to online. Levels 1 through 5 cost $229, including access to mobile apps for a limited time.

Rosetta Stone provides comprehensible input by putting new words and phrases in the context of multimedia elements: video, photos, audio, and text. A free demo lesson in the language of your choice is available on the Rosetta Stone website.

The **Pimsleur** language learning program focuses on speaking and comprehension rather than literacy in the second language, and includes courses in 44 languages. Lessons can be purchased as MP3 files, CDs, or software that includes flash cards and other multimedia features. Introductory packages in the language of your choice cost $150 for the first 30 lessons in software format, $21.95 for the first five lessons in MP3 format, or $49.95 for the first 16 lessons in CD format. Lessons can be purchased from the website, but they can also be downloaded at audible.com.

Pimsleur lessons may even be available from your public library for free, although language availability may be limited. A free lesson is available to try out on the Pimsleur website.

Another language learning publisher, **Penton Overseas**, is actually out of business, but its audio programs for several languages are more widely available for free through public libraries.

Who said language learning was boring?

Duolingo is one of the best free tools available for learning a second language. There are 20 languages to choose from, including English. Learners can access lessons on the Duolingo website or in the mobile app for iOS or Android.

The downside of language instruction delivered electronically, rather than face-to-face in a classroom, is the lack of social interaction. The purpose of language is, after all, to communicate with other humans.

Language classrooms, however, rarely provide learners with the opportunity to practice their new language with native speakers. Dialogue practice is often scripted practice between two or more learners at similar levels of fluency. This may not be the most effective or relevant way to learn and practice a new language. The internet now makes it possible for people to communicate from all over the world, providing previously impossible access to native speakers.

MyLanguageExchange is a social networking website that allows language learners to connect and help one another learn their respective languages. For example, a native English speaker who wanted to learn Italian can do activities in Italian, and receive feedback from native Italian speakers who are learning English, and receive feedback from native English speakers.

MyLanguageExchange uses the Cormier method of language exchange, in which small groups work together doing activities half the time in one of the native speaker's language, and the other half in the other native speaker's language.

Practice groups are not formed until learners are at intermediate fluency. Before this, they can form penpal relationships, communicating in emails and text chats.

Videoconferencing is another way for native speakers of different languages to connect. **Skype in the Classroom** allows teachers from all of the world to connect their classes, to take their students on virtual field trips, and to talk in real time to guest speakers. **Google Hangouts** is another videoconferencing tool that can be used to connect students or guest speakers from around the world. Students can work on collaborative projects, participate in book discussions, teach one another about where they live, and practice language with native speakers their own age.

Technology has made it possible for language learning to be more interesting, motivating, exciting, and relevant than ever before. With all these resources available, there is no need for traditional, boring activities such as copying and reciting verb conjugations or reciting scripted dialog. Language is a magical thing—a key to communicating and getting to know people and allowing them to know you. It's a shame that old-fashioned techniques killed the joy of learning a new language. Let's do better for the next generation. eSN

Lisa Rodriguez is a former bilingual teacher and current adjunct professor.

A tale of two pilots

For these districts, planning and vision were key to implementing new technology

By Becky Oristaglio and Nadine Aitch

Ed. note: Choosing hardware or software for an entire school district is a momentous decision, so it makes sense that districts across the country are choosing to organize pilot programs before signing on the dotted line. Here are two case studies of how carefully planned and executed pilots helped districts make informed choices while improving teaching and learning.

Listen and Learn

Central Falls School District, Rhode Island

Becky Oristaglio, speech and language pathologist

Hearing and understanding what is being said in the classroom play a crucial role in a student's speech and language development, reading and spelling ability, attention and concentration, and overall academic achievement. Experiencing the impact of poor acoustics in the classroom led me on a journey to create an environment where communication was optimal for students in my charge.

In early 2010, I began the search for the best amplification system to implement in the classrooms of Veterans Memorial Elementary School to improve learning for students with hearing loss and impairments, learning disabilities, and English language learners. I turned to university-level research and the district's consulting audiologist for high-quality recommendations on the best system available, and almost everything I read documented Lightspeed Technologies' Redcat audio system as the system of choice.

I presented the research and my vision for change to the principal, who embraced the idea and gave permission for a trial period. I contacted the local Lightspeed representative to discuss my lofty goal of implementing soundfield systems in all classrooms in the district and requested two trial units. The Lightspeed representative sent three units for trial, came to Veterans School to set up units, and provided instruction on how to use the Redcat.

Piloting one classroom at a time

The system came in three parts—speaker, wearable teacher's microphone, and a Sharemike handheld student pass-around microphone—which were simple enough that I was able to move the systems between classrooms after one week to give many teachers the opportunity to access the system's usability and impact on learning and student performance. At the end of the trial, the classroom teacher completed a questionnaire and provided feedback on the experience. At week's end, teachers were pleading to retain the system, because they noticed their students were more engaged in lessons and distractions were minimal.

My search for a solution that would help students with hearing impairments and learning disabilities as well as English language learners led to the realization that being able to hear the teacher clearly benefited every student in the district. With university research, documented trial data, and teacher/student feedback, the district clearly acknowledged the need for this tool in all classrooms. We made plans to expand our pilot.

Since this sort of technology was not budgeted, the special education director, consulting audiologist, and I wrote a grant proposal asking for funding to pilot the amplification system in every classroom in the school. We received the funding, and in 2010, 29 Lightspeed systems were installed at Veterans Memorial Elementary. Every year since, we've added more and more systems to our schools. Today our district has Redcat systems in 127 classrooms. Central Falls recently acquired funding and purchased 16 additional units scheduled for installation in ELL classrooms this summer. I hope to be able to procure the needed 10 soundfield units to fulfill my original goal.

Pilots test tech in real-world settings.

But we've gotten more than just hardware. Lightspeed and Central Falls have a close partnership. Every teacher gets troubleshooting tips before implementation, training on how to use the system, and ongoing support.

In addition to each classroom's Sharemike handheld microphones, we have purchased several additional teacher microphones for our shyest students to wear throughout the day. Hearing their voices amplified and the responses from their peers has increased their confidence, participation, and social interactions, resulting in improved academic performance and the establishment of positive peer relationships.

A rock star pilot

St. Clair R-XIII School District, Missouri

Nadine Aitch, assistant superintendent of curriculum, instruction, and assessment

St. Clair's instructional and technology team regularly attends professional development conferences, as well as

dedicating time to researching products that are new to the market. We also use Twitter to follow educational groups that are tied closely to Google, instructional technology (#GoOpen), and many other groups as well. For three years, I was a part of the team that attended ISTE, which is often where we find the next technology we want to pilot.

In most cases, it's a team decision to pilot a product that might fit an academic need in our district. Of course, our superintendent has the final say on whether it's fiscally possible to purchase the product. A key to our success with technology implementations is that we pilot two or three products a year but have never piloted a product that we knew we couldn't afford. Piloting products allows us to test them in real-world circumstances to make sure that we don't waste money, time, and forward progress on a product that is not going to positively impact student achievement.

We strive to do our homework on the front end. As part of our research, we contact other school districts that are using the product and conduct site visits to see and hear for ourselves what their teachers think of the product. Very rarely do we pilot a product that is brand new.

We're a PLC (professional learning community) district, so data is very important to us. We want data to drive our instruction wherever possible, so we need the data we collect to be useful and actionable for our teachers. Products also need to be easy for our teachers to adopt and use.

In 2013, the year our district went one-to-one, we found many resources with a focus on STEM, but we were not finding quality technology resources for literacy. We are a balanced literacy school, so the fit had to be perfect. After viewing myON at ISTE, we thought it supported our balanced literacy model, so we launched a pilot.

Starting with the rock stars

We made the decision to start small with the myON pilot, introducing it to a number of our rock star teachers during summer school. (We already had a few other new initiatives going, so we were worried that we would overwhelm our teachers with one more thing.) Using a train the trainer model, we set up extensive professional development for our rock stars and allowed them to implement and use the platform for a few weeks. We knew that if our rock stars gave their seal of approval, their excitement would spread through the district like wildfire, leading to more teachers asking to pilot the product as well. We never turn down a teacher who is interested in taking part in a pilot.

To measure the success of a pilot, we listen to our teachers. Often we will have teachers complete a Google Form or survey to share their thoughts on the pilot. Our instructional tech coaches spend a lot of time in the classrooms to provide support and to observe the product in use, so we have a good grasp of what teachers and students think of it and how it is being integrated.

Smart decisions

In the past, we've said no following a pilot. Ownership of the product changed companies in the midst of our pilot and there were several kinks in the new setup that caused our teachers and students to become extremely frustrated. It was an electronic product, so it was crashing, not tracking student data correctly, and giving us constant error messages.

If I were offering advice to other districts just starting with pilots, I would say: Do your homework up front. Conducting a district needs survey is a great place to start. Listen to your teachers too, but remember that often, teachers are not exposed to new products, so create a team to do some of the front-end research. Attending conferences like ISTE that have a heavy emphasis on instruction and technology is another great place to start. And most of all, don't pilot a product or initiative if you know the district can't afford it. eSN

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Personalized

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smoothly and efficiently was also appealing. As a professional invested in personalized learning, I believed that using the ILPs could have a dramatically positive effect on our students' growth. However, it was important to me that I not ask the teachers to implement something that I would not be willing to do for them. Upon further reflection, I also believed that the teachers deserved a personalized approach to learning, too.

This summer, all of our Achieve Virtual online teachers (included the BDED teachers) got together and learned more about personalization. They each constructed their own learner profiles and used those to create ILPs for their professional development for the year.

We had some common goals as a group, but the teachers ultimately decided what they would learn, how they would learn it, and when they would learn it. They were even given control over how much professional development they received this year. The principal and I knew that we worked with a group of dedicated professionals who did not need us to mandate a certain number of seat hours or tell them how they would best learn something.

I am currently working hard at managing about 60-70 ILPs for our teachers. We are all collaboratively contributing resources, discussions, and links to webinars and Twitter chats. I will still host face-to-face meetings for those who prefer that format and online mini-courses as well.

After two months of implementation, we are seeing a lot of success with the level of voluntary engagement in the professional development. At the end of the year, we will all get together and reflect. We will reflect on our successes, what isn't working, and how we can use our enriched understanding to make this work successfully for students.

While there will be failures along the way, I am confident that we can use them to learn, grow, and ultimately fail forward. eSN

Michele Eaton is director of virtual and blended learning for MSD of Wayne Township in Indiana.

Divide

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sion and business success. Bridging this divide expands the customer base for their services and the rest of the digital economy. Second, organizations must make signing up for discounted offers like Connect2Compete as easy and open as possible. Third, companies need to devote the necessary human resources to meet families where they are and get as many families signed up as possible.

These efforts get real results. More than half the families who have enrolled in the Connect2Compete program have seen improved grades for their children. The benefits extend beyond schoolwork, as adults also can go online to find and apply for jobs (more than 90 percent of recruiters use or plan to use social media to find potential employees). Digital literacy also will improve their likelihood of securing a job offer, as 50 percent of today's jobs require technology skills.

Undoubtedly, an ISP's commitment to go beyond simply providing a discount makes an even greater impact.

No student should have to spend time doing homework in the parking lot of a fast food restaurant. Affordable home access is a key component of achieving success in today's digital world. And, working together will help create these connections to the internet and the American Dream that all families deserve. eSN

Chike Aguh is chief executive officer at EveryoneOn—a national nonprofit working to eliminate the digital divide.

World

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lessons I can incorporate into Johnsonville. The supplementary curriculum provides students with research resources, videos, and project prompts that encourage students to think outside the box and put them in real-world situations.

On test scores

The state of North Carolina does not test students on collaboration and citizenship, but does consider critical thinking a key ability. I've discovered the best way to test student's critical thinking skills is through project-based learning. In addition to working in the realm of Johnsonville, students complete at least one project a month to show what they've learned in a real-world situation.

North Carolina state testing shows that my PBL model improves student scores. At the end of the 2016 school year, my fifth-grade students scored an average of 85 percent on the state science exam, while my school as a whole scored 58 percent. It's not a leap to suggest the focus on PBL and hands-on learning was the catalyst for this major boost.

It's important to remember that every child is different and learns differently. Relating classroom lessons to real life helps students at any level connect with the content and interpret it in a way they are able to understand. When students become part of their own learning, they take pride in their education and become more engaged. PBL not only keeps students busy, but it allows each one to show what they've learned in a creative, supportive, and collaborative environment. eSN

Anthony Johnson is a fifth-grade science and social studies teacher at Isenberg Elementary School in Salisbury, North Carolina.

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eSchool News ISSN: 1098-0814 is produced 4 times a year.

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The cost for a subscription in the U.S. is $120/year, Mexico or Canada $158/year, all other countries $196/year. Please enclose a bank draft or international money order in U.S. dollars. Back issues of eSchool News are available for $15 each.

For reprint permission contact: ndavid@eSchoolNews.com
Periodical Postage paid at Bethesda, Md., and at additional mailing offices.

POSTMASTER SEND ADDRESS CHANGES TO
eSchool News, Circulation Department, 7920 Norfolk Ave., Suite 900 Bethesda, MD 20814

Co-Founder Larry Siegelman 1954–2002

Anti-social media

Kids may be Facebooking at the breakfast table, Snapchatting through lunch, and tweeting on the bus ride home, but the one place they're not getting much social media time is in the classroom, according to a recent survey of more than 1,000 K-12 teachers. Despite an overwhelming number of teachers who admit to using social media platforms for personal use (83 percent), only 14 percent use it in the classroom–and of those who don't, 62 percent said they had no plans to start. Here's what might be keeping teachers logged out during class time:

81% are worried about potential conflicts from using social media with students

76% say parents sometimes use social media to monitor teachers' work and/or personal lives

20% are intimidated by students' knowledge of social media

31% have experienced issues with students or parents on social media

Source: Survey of 1,005 K-12 teachers conducted by Harris Poll on behalf of University of Phoenix between April 14 and 25, 2016.

UNITED STATES POSTAL SERVICE®

Statement of Ownership, Management, and Circulation (Requester Publications Only)

1. Publication Title	2. Publication Number	3. Filing Date
eSchool News	1 0 9 8 - 0 8 1 4	9/21/16
4. Issue Frequency	5. Number of Issues Published Annually	6. Annual Subscription Price (If any)
Published four times per year	4	$120.00

7. Complete Mailing Address of Known Office of Publication (Not printer) (Street, city, county, state, and ZIP+4®): eSchool Media Inc., 7920 Norfolk Ave. Suite 900, Bethesda, MD 20814 — Contact Person: Nancy David; Telephone (Include area code): 301-913-0115 x110

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9. Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor (Do not leave blank)

Publisher (Name and complete mailing address): Robert Morrow, eSchool Media Inc., 7920 Norfolk Ave. Suite 900, Bethesda, MD 20814

Editor (Name and complete mailing address):

Managing Editor (Name and complete mailing address): Stephen Noonoo, eSchool Media Inc., 7920 Norfolk Ave. Suite 900, Bethesda, MD 20814

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Full Name	Complete Mailing Address
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eSchool News	August/September 2016

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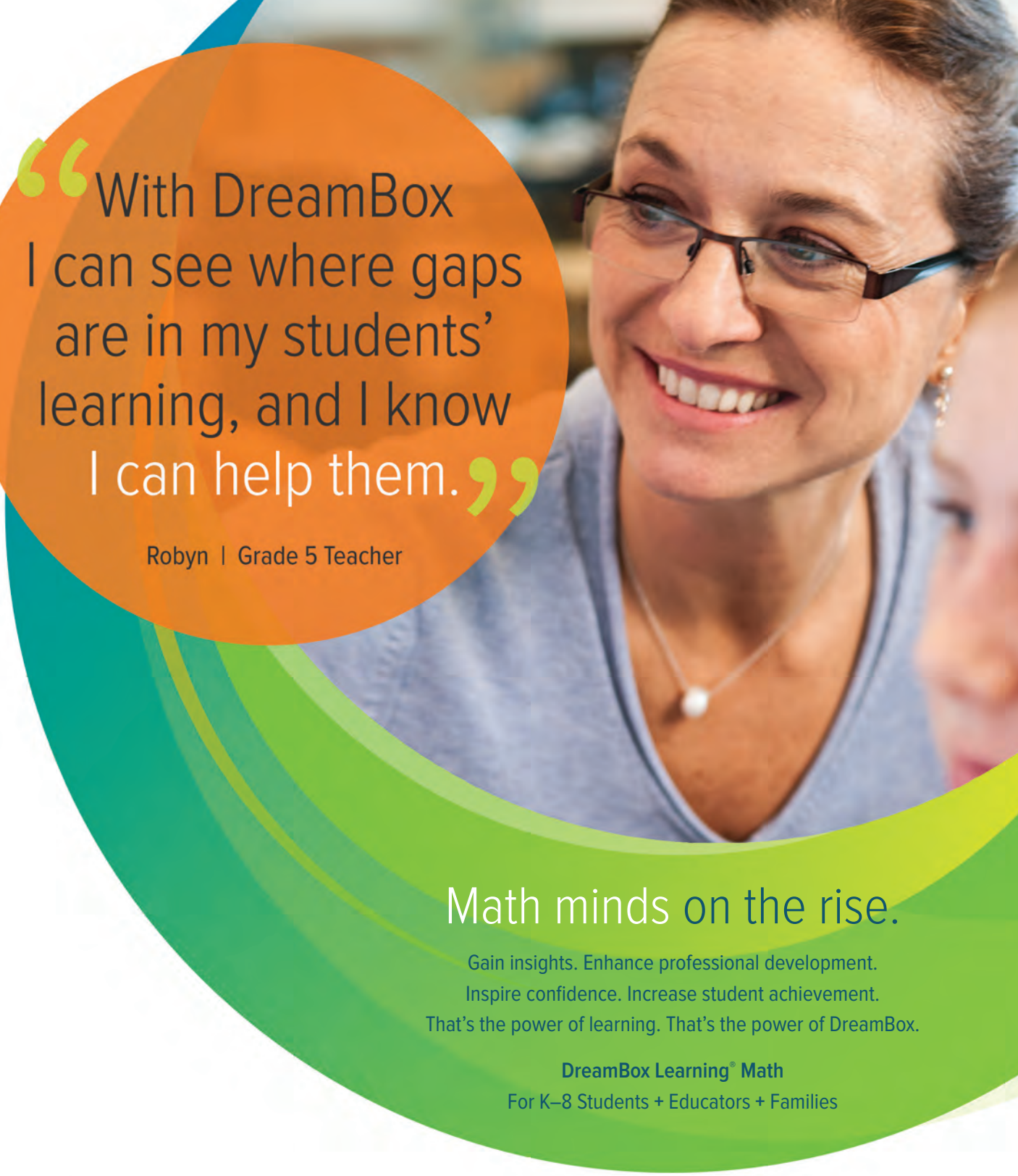

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