It’s not the tools—it’s what we do with them that counts.

—Katie Muhtaris and Kristin Ziemke

Help students make the most of any technology with lessons and teaching grounded in research and years of classroom experience that help you:

• explicitly teach kids how to be effective digital readers and thinkers
• give students practice with closely reading images, infographics, and video
• emphasize student ownership and innovation

Coming in October • 978-0-325-07473-3 • $18.50

Heinemann.com | P 800.225.5800 | F 877.231.6980

@LITERACYSPARK

Heinemann
Dedicated to Teachers

Houghton Mifflin Harcourt

@KRISTINZIEMKE
3 Ways Mobile Technology Is Transforming Learning Spaces

To support creativity and collaborative learning with digital tools, schools are creating flexible environments that give students ownership of the space and their learning. **By Dennis Pierce**
WiFi Is the New Water

DIGITAL EQUITY, like so many noble goals of educational technology, is a moving target. Once upon a time, equity meant providing every eligible student with equal time to sit in front of a desktop computer that sat in a computer lab. In the past few years, many districts have turned those computer labs into makerspaces and are now aiming for a new target: rolling out 1-to-1 initiatives to give every eligible student access to his or her own laptop, Chromebook or tablet.

But putting a device in the hands of every student doesn’t create true equity. As CoSN’s Marie Bjerede and Keith Krueger point out in their column on page 6, today there is a “mobility gap” between students who have constant access to broadband (at school and at home) and those who don’t. solar-powered buses in low-income neighborhoods overnight.

These are smart solutions, but as data usage increases (and it will) they won’t be enough. The target will continue to move. For today’s connected students, broadband is a commodity, like electricity and water. Fortunately, some help might be on the way from the federal government. The FCC is in the process of pondering plans to modernize the Lifeline program, which has previously provided basic telephone service to families that can’t afford it. One possible change on the table is expanding the program to include home broadband connectivity (which the FCC calls “essential to participate in society”) for those who need it most.

School districts and the federal government are addressing the “mobility gap” between students who have 24/7 broadband access and those who don’t.

Creative districts around the country have found a number of ways to eliminate or minimize the mobility gap. Some partner with local businesses that are willing to share their bandwidth with students so they can do their homework. Other districts offer mobile WiFi hotspots that students can check out of the library. And then there’s Coachella Valley USD (CA), where they park WiFi-enabled, solar-powered buses in low-income neighborhoods overnight.

Adapting this program to help provide broadband access for families that need it makes perfect sense to me. For today’s students, a reliable connection to the Internet truly is a lifeline.

To continue the conversation, e-mail me at cpiehler@1105media.com.
NOW YOUR STUDENTS CAN REACH FOR THE STARS.

CLOUD MIGRATION and ADOBE and CDW-G

The future success of your students is laid out on a digital landscape. And as your classrooms evolve, so should your infrastructure. We work with you to seamlessly integrate a customized cloud solution for your institution that’s secure and flexible for the future. Prepare your students for new digital heights in the cloud.

Learn more at CDWG.com/Adobe
How Digital Equity Can Help Close the Homework Gap

According to a CoSN survey, 82 percent of school districts don’t have a plan to address students’ Internet access outside of school. That needs to change.

Does educational technology close the achievement gap or widen it? Even in the best-case scenarios, when the potential of digital learning is fulfilled and all student achievement increases, the gap is likely to increase. Why? As Tom Vander Ark points out in his book Getting Smart, when we use ed tech to raise the floor for student achievement, the ceiling is raised even further.

Unfortunately, educational technology leaders often see only the best-case scenario. In reality, when the achievement gap increases, sometimes it is because the absolute performance improvements may be limited to select students due to a number of factors.

First, many describe digital learning as an amplifier of teaching, especially in our increasingly mobile world. Great teachers accomplish amazing things with this technology, guiding students to cognitive improvements and increased self-efficacy. Unfortunately, poor teaching is also amplified. In the hands of unskilled teachers, technology can actually decrease student performance.

Second, the promise of 1-to-1 and BYOD strategies enables changes in teaching and learning. Yet in all too many implementations, teachers use these new technologies to support traditional teaching methods: PDFs replace textbooks, apps replace worksheets, PowerPoint presentations replace poster boards and the Internet replaces library searches. The classroom structure, however, remains unchanged. Without changing teaching and learning, student outcomes don’t improve as compared to those implementations where authentic student-centered techniques leverage technology to shift teaching and learning.

Third, while school culture has a critical impact on whether educational technology is accessible and how it is used, so does home culture. In many communities, particularly those with high immigrant populations, a distrust of technology and government oversight limits technology use in the home. In some lower-income families, parents can only offer limited support after school hours, and often create a home culture in which academic achievement isn’t valued. This home culture gap gives students whose parents are supportive and knowledgeable about technology an advantage over those who don’t.

Fourth, the homework gap affects both individual students and entire classrooms and buildings. Several studies have indicated that more than 75 percent of teachers assign homework that requires the Internet. This puts students without home access at a disadvantage, and also puts the burden on teachers to find a way to allow those students to complete homework without the Web. This has a dual impact: The additional time and resources required to support two homework mechanisms are costly; and if one student does not have technology in the home, teachers are constrained from shifting their teaching to the new pedagogies that depend on connectivity in the home to raise student achievement.

Finally, there is an inequity beyond the homework gap that is seldom considered as part of the national connectivity conversation. The 2010 National Educational Technology Plan called for “anytime, anywhere” learning for students. Today, there is a “mobility gap” between those students who have access to cellular broadband 24/7 and those who don’t.
Having even a single student who lacks home broadband access perpetuates the homework gap. When students can’t rely on adequate Internet access, they must continue to support old work habits and processes in addition to the new, digitally based processes. Of course, not all schoolwork will be digital, but for those learning experiences that are, a lack of access is costly.

Many students don’t enjoy the luxury of going home to Internet access. Whether they attend afterschool childcare, have afterschool jobs or are involved in sports or activities, students who are unable to connect to the Internet for several hours between school and home are at a disadvantage.

It can also be difficult to assess whether students have adequate Internet at home. Many students report that they have Internet even if they only have shared access to a parent’s cellular device or slow Internet connections. There are roughly 11.6 million American households with children ages 6 to 17 with incomes below $50,000. Nearly one-third (31 percent) of those households do not have a high-speed connection at home. Without sufficient access to broadband, students may not be able to watch and digitally reflect on educational videos or recorded lectures, or experience interactive content the way their peers do.

**How Can Districts Close the Gap?**

The CoSN 2014 Infrastructure Survey indicated that 82 percent of school districts do not have a current initiative to address students’ need for Internet access outside of school. Digital equity and the homework gap are community challenges that cannot be entirely fixed by school districts. Yet there are numerous steps that districts can take to support mobile students, mitigate inequities and start a conversation with their business partners, philanthropic partners and parents.

Districts ought to first ensure that devices outside the school network, including those from home Internet providers and cellular data networks, can access student digital tools and resources. Generally, this process involves using collaborative tools and digital resources that are hosted in a private, public or hybrid cloud. This means that students who have access at home and/or data-enabled mobile devices can access their learning communities and resources anywhere they already connect.

Districts have developed a number of creative approaches to help students who don’t have the ability to connect outside the school networks. Many districts work with Internet providers that offer low-cost home Internet access to qualifying families. These programs often cost around $10 to $12 per month. Moreover, the Federal Communications Commission is currently considering plans to modernize the Lifeline program, which has traditionally provided basic telephone service to low-income families. The changes would likely expand the program to provide home broadband connectivity options, possibly using new metrics such as free and reduced school lunch to determine eligibility.

Many districts are mapping the libraries, coffee shops, fast food restaurants and other places in the community where students can find free Internet access after school hours. Some of these sites are branded with a seal indicating that the business is a WiFi Homework Partner with the school district. Some districts are providing WiFi on school buses so that students can connect on the long rides to and from school. Some, like Coachella Valley Unified School District (CA), even park the buses overnight in locations such as trailer parks where there is a high density of students from low-income families without Internet access. Kent School District (WA) is installing free Internet kiosks in subsidized housing buildings to reach low-income families. Albemarle County Public Schools (VA) is repurposing frequency allocation from commercial use and developing a 4G wide area wireless network that will provide high-speed at-home Internet access for thousands of students within two years.

Still other districts provide laptops or mobile devices with cellular data modems that allow students to access the Internet at any time or place. Others provide mobile hotspots that students can keep for the school year or check out as needed from the library.

Such admirable efforts move K-12 educations toward digital equity. They not only provide connectivity right now but also lead districts to build networks that will support anytime, anywhere teaching and learning. These initiatives also demystify the Internet and computers, building student and family support for the educational use of technology.

**Several studies have indicated that more than 75 percent of teachers assign homework that requires the Internet.** This puts students without home access at a decided disadvantage.

As with all ed tech challenges, equity is more a human issue than a technological one. Education technology can raise the floor of student achievement, but only if both the technological and human infrastructures to support that transformation are in place. This is not a problem that will be “solved” in the near future, but we must begin by making every effort to connect our current students, and continue by laying out a roadmap toward equity.

---

Marie Bjerede is the project director of the Consortium for School Networking’s (CoSN’s) Leadership for Mobile Learning and Smart Education Networks by Design initiatives.

Keith R. Krueger is the CEO of CoSN. You can contact him with questions or comments at keith@cosn.org.
Is the ‘App Mentality’ Killing Students’ Creativity?

According to authors Katie Davis and Howard Gardner, today’s students view their lives as a string of ordered apps. Does this mindset help or hurt their ability to think creatively?

BACK IN THE EARLY 2000s, Katie Davis was teaching fourth grade. She learned basic HTML so she could post her weekly homework and class helpers on a Web page. Although her site was static (think Web 1.0 before Blackboard and eChalk) she was amazed at her students’ reactions. “My students loved it,” she said. “They were so proud that we had the only classroom website. They were thrilled to see either their name or their picture on the website. It was really interesting to me to see how captivated they were.”

Davis filed this reaction away, thinking that one day she might like to explore the effects digital media have on America’s youth. She got the opportunity while working on the Developing Minds and Digital Media (DM2) project with Harvard professor Howard Gardner, best known for his theory of multiple intelligences. The DM2 project explores the intersection of human development and digital media in both cognitive and social domains.

Today’s youth, according to Davis and Gardner, are not just immersed in apps, but they view their lives as a string of ordered apps. They believe that all their desires and questions (“Where’s the closest Starbucks?” “Who won the 1978 World Series?”) should be satisfied or answered by an app. If an app doesn’t exist to satisfy the desire or answer the question, then someone should create it. Further, if the required app cannot be created, then the desire or question doesn’t or shouldn’t matter.

This mindset is what Davis and Gardner call the “app mentality,” a concept they explore in their book The App Generation: How Today’s Youth Navigate Identity, Intimacy and Imagination in a Digital World. Davis, who is an assistant professor at the University of Washington Information School, said that digital media has created a world in which “there should be and are immediate answers to all our questions. It’s sort of like an algorithmic way of thinking ... I input this and I get this out. It’s going to be a very clear and immediate answer.”

Individuals with this mindset, most notably America’s youth, leave themselves little time for sitting with ambiguity or complexity, puzzling over specific scenarios. “The emphasis is on the immediate, the definitive,” said Davis. “If I do this, then I’ll get this outcome.” Today’s adolescents systematically move from step to step, navigating their lives much like they navigate their apps: with very few opportunities to take detours on unexpected paths.

The Case for Quiet Reflection

Davis and Gardner divide apps and their users into two categories. Individuals who use apps to pursue new possibilities are “app-enabled.” Those who allow apps to restrict or determine procedures, choices or goals are “app-dependent.” Apps are great if they assist with ordinary stuff and free up their users to explore new paths and ponder the mysteries of life, Davis and Gardner write. But apps, they warn, may be creating a new variety of couch potatoes who don’t think for themselves or pose new questions. Psychologically speaking, apps may simply line the road to serfdom.

Some adolescents play video games or text to fill time when they’re bored. Many experts lament the lack of time youth spend in quiet reflection, a common theme among academics and the press. This lack of reflection may be causing them harm. Researchers have identified a number of benefits that accrue when the brain is at rest (relatively speaking) and focused inward. Downtime appears to play a restorative role, promoting feelings of well-being and, ultimately, helping individuals to focus their attention more effectively when necessary. “There’s a
part of the brain called the default mode,” said Davis. “It’s when you’re not directing your attention outward but sort of focused inward and not really doing a whole lot.”

While in this state, the brain is actually doing plenty, most importantly actively forming connections.

Two of the most important aspects of children’s emotional development — self-awareness and empathy — are formed during this default mode. “This suggests that if we’re spending so much time externally focused and focusing on what other people think of us … or just filling time on our phones playing Candy Crush … there’s less time for the default mode of the brain to be active and to develop that self-understanding and empathy,” said Davis.

For individuals to make intelligent decisions about their lives, they need to step back and take stock, said Gardner. “This is true whether one is 7 or 70. Since young people of the artistic decisions made by each artist, considering composition, background, medium and themes.

After considering the criteria codes, Davis and Gardner found that the more recent works demonstrated increased complexity, pushing artistic boundaries further than the pieces from the early 1990s. The percentage of “conservative” pieces declined from 33 percent of the early pieces to 19 percent of the later pieces, whereas the number of “unconventional” pieces rose from 19 percent to 28 percent.

When Davis and Gardner looked at students’ fiction writing, however, they found a different trend. They analyzed middle and high school fiction writing from a school in the South and one in the Northeast. The more recent samples, they found, failed to push literary boundaries as far as the earlier works. “They tended to be more traditional stories. They had less fantasy elements than the earlier pieces. If the author was a middle school student, then often the protagonist was a middle school student. Often the story took place in a school,” said Davis. The newer writings lacked “genre play.”

By comparison, the earlier writings featured far more fantasy elements, with made-up worlds, creatures and scenarios. “It was a completely opposite trend from what we were seeing in visual art,” said Davis.

She can’t say exactly why adolescents’ creativity has increased in visual arts and declined in writing, but she does offer a theory. Although the past 20 years have seen significant growth in digital technology, that hasn’t been the only significant change. Teaching philosophy has undergone a sea change, especially in language arts. Teachers spend a great deal of time encouraging their students to master the five-paragraph essay. Davis said students are taught to organize clearly and to do what is safe. This has had “an impact on kids’ writing and what they’re willing to try out in much more time looking at and experimenting with visual effects on their devices, and they have less time and inclination to read extended works of fiction. We know for sure that unless one reads a lot, one cannot become a skilled writer,” he said.

Davis offers a litany of positives digital media offer today’s adolescent, like the opportunity for self-expression and creativity and the opportunity to start, maintain and strengthen personal relationships. However, she said, technology enables some actions and stifles others. “It shapes our actions in specific ways. In order for us to retain our human agency, it is important for us to have that understanding and be willing to strike out on our own without our technology from time to time,” she concluded.

Digital Media’s Effect on Student Creativity

In addition to possibly hurting adolescents’ potential to form connections of self-awareness and empathy, digital media may also be affecting creativity in visual arts and fiction writing. Davis and Gardner analyzed artifacts created by middle and high school students between 1989 and 2011. They gathered 354 random pieces of published visual art from Teen Ink magazine. Two fine arts graduate students developed a coding scheme reflecting the individual elements in students’ increased creativity in the visual arts. Today’s students have access to an abundance of visual art from any number of digital platforms and may be inspired by the art they can access. Ready-made visual art is only a mouse click or finger swipe away.

When it comes to the physical act of creating art, students have a wide range of digital tools that assist in the creative process. Digital media has lowered the floor, so to speak, and has allowed more students than ever to create art, said Davis. That said, she points out that all apps have constraints that stifle a student’s creativity.

Gardner also has a theory about the increase in visual creativity. “It’s reasonable to assume that young people today spend

When students fill time playing Candy Crush on their phones, this leaves less time for the “default mode” of their brains to activate and help them develop self-understanding and empathy.

are often impulsive and prone to making ill-considered decisions, it’s especially important for them to develop the habit of shutting off their devices, taking a walk, looking around at the scene, reflecting on what has happened and thinking ahead to what might come next. If one is being bombarded by messages and feels compelled to respond at all hours of the day or night, then one has difficulty taking control of one’s life.”
FROM THE OUTSIDE, Barrow Elementary School in Athens, GA, looks like any traditional school building built in the 1920s. Inside, it looks completely different. Instead of desks arranged in tidy rows, the classrooms have tables that can be reconfigured in seconds by the students themselves, depending on what an assignment calls for. There are spaces where students can work together in teams, and comfortable chairs for individual study. Nooks tucked off hallways enable teachers and students to gather in small groups, and wireless access points allow them to use portable digital devices anywhere in the building.

According to Philip Lanoue, the superintendent of Clarke County School District, where Barrow is located, “Our goal is that, when you walk into our buildings, you’re inspired to learn.” Barrow Elementary is among a dozen schools in Clarke County — and one of a growing number of schools nationwide — that have been designed or retrofitted to support new ways of learning.
MOBILE TECHNOLOGY IS TRANSFORMING LEARNING SPACES

To support creativity and collaborative learning with digital tools, schools are creating flexible environments that give students ownership of the space and their learning. BY DENNIS PIERCE
The traditional classroom setup, with rows of desks facing forward, worked just fine when lecturing was the predominant form of instruction. But as more schools have shifted from a teacher-centric to a student-centric approach to learning, the design of K-12 learning spaces is evolving as well.

“New kinds of learning require different approaches to classroom design,” said Leslie Wilson, founder and chief executive officer of the nonprofit One-to-One Institute, which advises schools on how to use technology to transform instruction.

Aided by mobile technologies, students are more able to work together in groups to solve problems or challenges, Wilson said. They’re also working independently with adaptive online software that tailors the lessons to meet their needs. They’re making movie trailers, designing photo books or creating other artifacts to demonstrate their learning. And the environments in which they do these tasks must be flexible enough to support this more active, collaborative style of learning — with students freed from desks and teachers untethered from the front of the room.

For this reason, many schools have begun integrating furniture that students and teachers can move around easily and put together in various configurations to accommodate different groupings. What’s more, many of these new desks, chairs and tables are ergonomically designed for greater comfort, “so that young people can get up and move around,” Wilson said. She noted: “Students aren’t stationary any more.”

**Enabling Learning Anywhere**

In Clarke County, district leaders are very deliberate about the design of their learning spaces. Lanoue said, “In every school project, we create a building design team composed of community members, parents, teachers, school leaders and the architect who facilitates the process, along with a member of the district building team.”

Each of the district’s buildings has a different design based on a set of common principles, such as the use of agile, student-friendly learning spaces throughout the structure and support for wireless and digital learning environments. For instance, the hallways and common spaces at Barrow and several of the district’s other schools include flat-screen TVs, flexible furniture or simply comfortable places for students to sit and do work. “For us, learning can occur anywhere,” Lanoue said.

Supported by these more flexible learning environments, “our teachers have been able to design lessons to take full advantage of engaging students individually, in groups or as a whole class,” he explained. “Our ability to use furniture to transform class settings and configurations quickly and easily promotes greater student collaboration, which creates a 21st century learning environment. Students can finally learn in spaces that are more aligned to how we want students to engage while they are in school.”

And the spaces themselves often are incorporated into the learning process — from maps of Georgia embedded in hallway floors, to exposed rainwater collection systems or imprints of native animals in concrete. “Our spaces themselves spark conversations,” Lanoue said.

Redesigning K-12 learning spaces can have a significant effect on student behavior, said Lennie Scott-Webber, director of education environments at Steelcase Education. “If you walk into a classroom and all the desks are arranged in rows, you are being conditioned for a certain behavior,” she said. This type of setup implies to students that they should stay in their seats and listen quietly to the lesson. By contrast, a classroom environment that is more open and inviting “gives students permission to act differently.”

Greg Green has seen this phenomenon firsthand as principal of Clintondale High School near Detroit, where the classrooms have been designed with active digital learning in mind. As in Clarke County,
Empower your students to think and act like scientists.

Save time leveraging your curriculum using a web-based platform for student-centered, inquiry-based learning.

Journal
Engage your students with our interactive online journals.

Resource Library
Support materials, investigation templates, and time-saving ideas for your classroom.

Science Teacher Community
Connect and collaborate with other educators in your field.

Visit nexgeninquiry.org to learn more and sign up for your free trial.
Clintondale students can reconfigure their desks quickly to support either whole-class or small-group instruction — and there are soft, comfortable seating options that allow students to work individually as well. Green said the design of the learning space plays a key role in setting up students for success.

Aligning classroom design with the learning activities that will take place there “is something that school leaders haven’t thought about a lot in the past,” he said. “But that’s changing.”

Unleashing Creativity

Thoughtfully designed learning environments can help unleash students’ creativity, as organizers of the Convergence Academies project in Chicago have found. In 2013, the Center for Community Arts Partnerships at Columbia College Chicago received a $3 million federal grant to establish a 21st century instructional model that integrates digital media and technology within two Chicago public schools, Morrill Math and Science School and Tilden Career Community Academy. As part of the project, organizers created a “digital atelier” (workshop) within each school.

The project’s co-director Mindy Faber said, “We wanted it to be a space powered by creativity and play, making a new kind of learning possible.” Faber and her colleagues enlisted the help of Archeworks, a nonprofit architectural firm, to design the ateliers with input from both students and teachers. “We asked kids about their hopes and dreams for the space,” Faber said. “We also developed a toolkit so other schools could build similar spaces.” The result, she said, is a “physical manifestation of connected learning” that is inspired by the “maker” culture.

One of the challenges that designers faced was resolving the tension between what students wanted and what their teachers wanted from the space. Teachers who were used to a traditional classroom layout favored a more structured learning environment, where they could see all students as the teenagers worked on their computers. Students, on the other hand, wanted spaces for collaboration — and also some private areas for doing independent work.

As a compromise, designers of the space divided it into two parts. One side looks more like a traditional computer lab, but with soft seating and tables for collaboration. The other side is a more informal space where students can lounge and quietly explore technology on their own.

The furniture includes comfortable seating options, tables on casters that can be moved around easily, and electrical outlets built into all seating units so that students can plug in their digital devices. During the day, the space is used for project-based learning; after school, students can hang out and learn digital skills with the help of “atelaristas” who are adult mentors such as digital artists and filmmakers.

Researchers from the University of Illinois-Chicago are studying how the design of these informal learning spaces has affected student behavior, and early results suggest that students have benefited academically and beyond. Both schools have moved off the probation list since the digital ateliers opened, and students have enhanced their digital skills. Perhaps more importantly for these teens from low-income families, they now have “places where they can relax, develop caring relationships with adults, and explore their own identities,” Faber said.

Freeing Teachers and Students to Customize Their Classrooms

In many classrooms, new designs come with new furniture. Clarke County district leaders have incorporated furniture from manufacturers Smith System, Scholarcraft, and Mediatechnologies in their flexible learning environments. Clintondale High School worked with Steelcase to reconfigure its classrooms for 21st century instruction. The Convergence Academies in Chicago are using furniture from Bretford.

But educators don’t have to invest in high-end furniture to remodel their classrooms. According to elementary school
teacher Erin Klein, who studied interior design in college before becoming a teacher in Bloomfield Hills, MI, even small steps can make a big difference. Klein drew upon her design experience when rethinking her own classroom space. She started by rearranging students’ desks in different configurations, then realized that traditional desks were cumbersome and took up a lot of space. So she got rid of the desks altogether and brought in various seating options that she bought at discount stores. A breakfast nook table now serves as a space in which students can collaborate, while smaller tables can be moved around the room as needed. Klein also brought in some rocking chairs for students to sit with a book or a tablet.

“In design, you consult with the client to understand his or her needs,” she said. “Well, in education, our clients are the students. So I asked students what they wanted from the space, and I learned that variety was the key. Some students would prefer to sit, while others wanted a place to lie down. Just like with instruction, there is no one-size-fits-all approach to classroom design.”

Klein found that behavior in her classroom improved when she made these simple changes. Because her students were more comfortable in their new environment, they were more engaged in their work. And because they felt like the space was “theirs,” she said, they took more ownership of their learning.

Inspired by this success, Klein has created ClassroomCribs.com, a website where educators can showcase their own redesigned classrooms and to learn from others. She also presents at ed tech conferences on the topic of learning space redesign.

“Children are comfortable researching with their devices,” she said. “When you set up spaces that allow them to do this, it makes differentiating instruction so much easier. And when you have more creative options for students to gather and have deep, meaningful conversations, I think you’re going to be really surprised by what your students are capable of.”

Dennis Pierce is a freelance writer who has been covering education and technology for nearly 18 years. He can be reached at denniswpierce@gmail.com.

5 TIPS FOR REDESIGNING K-12 CLASSROOMS

Want to rethink the design of learning spaces in your schools, but you’re not sure where to begin? Here are five suggestions.

1) Visit other schools.
Leslie Wilson, founder and CEO of the One-to-One Institute, recommends visiting other schools to gather ideas for what is possible. “Touch it, see it, and visualize it,” she suggested. “You’ve got to see the space in your mind in order to create it.”

2) Ask students what they want.
“Kids like being able to have a choice in where and how they learn,” said elementary school teacher Erin Klein. She had several conversations with her students about the type of learning environment they wanted, then set about creating it in her classroom.

3) Focus on the learning goals.
“Build learning spaces based on what you want kids to be able to do,” Wilson said. For instance, if you want students to be able to create artifacts using technology, you’ll need a space for creating — complete with the tools they will need to do this work.

4) Pay attention to small details.
Focus not just on the arrangement of spaces, but also what’s on the walls, Klein advised. She cited research from Carnegie Mellon University that suggests how easily distracted students can become by stimuli that turn their attention away from the content.

5) Consider power supplies.
“Make sure you have enough power outlets to support recharging,” Wilson said. Some furniture manufacturers build power supplies directly into student seating, while Steelcase has introduced a new power distribution kit, called Thread, that runs power beneath a classroom carpet to anywhere in the room.

....but when they asked the students what they wanted in their learning environment, students asked for spaces for collaboration — and also some private areas for doing independent work. The final design was a compromise between the two.
The Promise (and Perils) of Digital Textbooks

Whether buying whole texts, curating digital content or writing their own curriculum, educators want flexibility and reliability, which often means having printed materials on hand.

The New Media Consortium’s 2014 Horizon Report K-12 Edition noted that although digital textbooks have become a mainstay in higher education, they have been slower to infiltrate K-12. The report’s authors added, however, that the “financial and educational benefits of digital learning materials will eventually outweigh the outdated paper textbook dependence in K-12 education, and gradual adoption of digital textbooks is expected.”

The Journal recently spoke with teachers and administrators in several districts that are experimenting with digital versions of textbooks from traditional publishers as well as those curating digital material to compose new, more personalized texts for their students. From their responses, it is clear that the promise of digital texts has been matched by frustrating deployment issues.

Learning From a Rocky Rollout

As with many newer technologies, the earliest adopters were going to take the arrows. And that is what happened to Fairfax County Public Schools (VA), which has been working with digital textbooks in world languages, mathematics and social studies for more than five years.

Craig Herring, the director of pre-K–12 curriculum and instruction, said the district made the mistake of thinking it could do away with hardcover social studies books, buy everyone a license for an online version and then have classroom sets of hardcover books for students who might have trouble accessing the online text. “When we rolled it out, we went to classrooms to see how teachers were using them,” he said. “The teachers were resistant and the kids were resistant. We found that the 11th- and 12th-graders really hated it. We hypothesized that they had set their study habit routines and didn’t want to change them.”

The teachers did not think it was a better way to go instructionally. “By the time the kids started up the laptops in class and the teachers resolved any technical issues,” he added, “they thought ‘I just wasted 15 minutes of my class when they could have just opened their book.’ ”

The district rolled out digital math textbooks three years ago, and found they had more interactive elements and videos, said Rose Moore, the pre-K–12 mathematics coordinator. But usage still varies from school to school and teacher to teacher. The district also purchased hardback copies for 40 percent of the students, and since then, some schools have purchased more.

“When we first rolled out the math textbooks from Pearson we had tons of problems,” Herring admitted. The district approved the digital textbooks for more than 150,000 students over the summer “and just turned it over to teachers in the fall and said ‘Have at it.’ Well, teachers knew how to put a book down in front of a student, but when you talk about issues of getting online, passwords and troubleshooting which platform the student is using, it was a nightmare,” he said. “We spent a lot of time trying to figure out the technology piece of it and that hampered the use of the instructional piece in the first year. We had very little usage. We didn’t have our ducks in a row and it really hurt us.”

One major problem was that teachers had to go into the online system and register each student, which took a lot of work. Through a glitch with Pearson, Herring said, all the students’ registrations were erased. The teachers had spent all this time inputting their 150 students, and now they had to go back and put them all in again.
Complete classroom management and orchestration for any platform

If your students have been welcomed back to school with the latest “must have” classroom technology, you’ll want assurances that your support tools can continue to help you achieve the required learning outcomes.

With dedicated versions for all leading desktop and mobile platforms (including Windows, Chrome OS, Mac, Android, iOS and Linux) and backed by award-winning assessment, monitoring, collaboration and control features, it’s no surprise that NetSupport School has been the trusted choice of teachers for over 25 years - whatever the mix of devices.

And did we mention… we’ve wasted no time in making NetSupport School Windows 10 ready!

Learn more and download a free trial at: www.netsupportschool.com

T: 1-888-665-0808   E: sales@netsupport-inc.com
Despite these problems, Moore said the district has gained some momentum each year. “We have not had the level of implementation we would want, but it continues to pick up every year.”

They are also using the lessons they have learned to prepare requests for proposals for digital textbooks in the future. “We are telling digital publishers we are not going to look at your product if you don’t have a way to automatically register students from our student information system,” Herring said. They won’t sign contracts as long as six years again. “We are not going to deal with you if you don’t have support phone numbers for students and parents after 5 p.m. And they have to be more platform-agnostic, so students can access it from whatever device they want to use.”

Moore added, “Instructionally we also have implemented a new needs assessment from teachers. Before we even look at the textbooks we want to feel that we understand their needs for the resources, and build that into RFP.”

**Teacher as Curator**

Janet Hurst, a sixth-grade teacher from Corinth Middle School (MS), has begun curating her own content for students using a solution called icurio from Knovation. It features more than 330,000 open educational resources for all K-12 curriculum areas, contextualized by educators and aligned with state and Common Core standards.

Last year the district began a 1-to-1 initiative that provided a laptop for each student. Hurst said she was drawn to icurio because of the resources it has available. “You spend a lot of time looking for great resources,” she explained. “The fact that they had compiled so many great resources in a place where we could build lessons and present them to students and differentiate it, all of that together in one place was interesting.”

Hurst doesn’t necessarily see icurio totally replacing the need for a textbook. “I personally don’t believe that it is best for students to be only tied to a technology device. It does open up so many possibilities for them as far as research and personalized learning, but I don’t see it completely eliminating other things. In a science classroom, I would want those text resources available — maybe not passed out to all students, but have them available.”

Hurst does like the flexibility the platform offers to try new content and lessons. “Even if you teach the same grade level every year, you have a different group of students every year, so it is nice to be able to go in and tailor it to your own students and not have just a cookie-cutter curriculum,” she said. “The nice thing about icurio is that the resources have been vetted, so you know there won’t be anything inappropriate for students or links that don’t work.”

**Authoring Your Own OER Digital Text**

Travis Lemon, a seventh- to ninth-grade math teacher at American Fork Junior High (UT), is working on a project to create an open source digital math text to match up with new teaching standards in the state.

As Lemon and his colleagues started to create professional development material to help other teachers understand the standards for mathematical practices, they just didn’t find materials that would embody that vision, either in the traditional textbook world or in OER material. A lot of the OER materials for math at that time didn’t incorporate the practice standards and were quite traditional in nature, Lemon said, so the Utah math teachers decided to start authoring what became the Mathematics Vision Project themselves. “It incorporates research of the last 20 to 30 years in math education,” Lemon said, “as well as efforts to make math more accessible to all students.”

“As we were writing it in 2012, a few of us were using it in our classrooms and getting feedback,” he said. “There was such a need for materials that we were getting things out as quickly as we could. We have gone back and made revisions,” he said. Lemon said that one advantage of a digital resource is that you can revise it as often as you like. “It is more responsive than a traditional paper textbook that often isn’t updated for five to seven years, depending on their publishing cycle,” he said. On the other hand, in the digital age people tend to expect you will make those changes overnight. “There are advantages there, but also growing expectations, which are hard to satisfy,” Lemon said.

Despite the text being digital, Lemon’s students don’t have ubiquitous digital access to the materials. “I am still printing it out and using it that way,” he said. “I can’t rely on all my students having devices yet, but we are moving in the direction and it will only be a few years before I have 1-to-1 devices for students.”

‘Everything Will Be Digital’

Kim Gartner, a seventh-grade science teacher at Hilton Head Island Middle School (SC), has been using Discovery Education’s digital Science Techbook for the past two years. “I think it has been an improvement over the print textbook,” she said. The Techbook includes a combination of videos, photographs and audio recordings. Students can highlight text and have it read to them aloud. They can add sticky notes to key passages. Text can also be modified for different reading levels, viewed in Spanish or printed out. “I had to teach my students how to access it,” Gartner said. “It took some training just to get them used to searching for information and where to find videos if they need more help.”

Gartner said she prefers the Techbook to putting on the onus on each teacher to pull together his or her own OER material. The idea is to provide diversity within the classroom using the one resource, so everyone can have common assessments, she explained. “Too many choices might make it more difficult. We have all three seventh-grade science teachers on the same pace following a curriculum map.”

She said some teachers have been reluctant to use digital textbooks, but she likes to jump in when she gets the chance to try something new. “You can’t deny the technology to students,” she said. “That is going to be their future. Everything will be digital.”

David Raths is a freelance writer based in Philadelphia.
**THE CODE THAT NEVER SLEEPS**

Visual Studio Live! is hitting the open road on the ultimate code trip to help you navigate the .NET Highway. The next stop? NYC, and we’re geared up to be back in the big apple for the first time since 2012.

From September 28 – October 1, Visual Studio Live! is bringing its unique brand of practical, unbiased, Developer training to Brooklyn, offering four days of sessions, workshops and networking events — all designed to help you avoid road blocks and cruise through your projects with ease.

Register by September 2 and Save $200!

Use promo code NYSEP1

Scan the QR code to register or for more event details.

VSLIVE.COM/NEWYORK
Using Educational Games for Project-Based Learning

Heather Messer, a teacher at Clark Street Community School in Middleton, WI, recently incorporated a video game into her classroom for the first time. Her school focuses on place- and project-based learning, but according to Messer some students are resistant to this approach. “Sometimes I see kids that view themselves as gamers, kind of on the edge of school, because they don’t necessarily associate gaming and school,” said Messer. “And so I wanted to more actively support what our gamers do.”

The school’s 15-week terms are followed by a three-week “deep dive” on a specific topic. For one particular deep-dive session, Messer developed an interdisciplinary English, math and science seminar called “It’s Rocket Science,” which was inspired by the movie Interstellar. “If you’ve seen Interstellar, you…”

4 Innovative Ways to Teach With Video Games

Educators from around the country share their best practices for using educational and consumer games to improve students’ engagement and performance.

Fifty-five percent of teachers use video games in the classroom on a weekly basis, and many find these games to be an effective tool to motivate low-performing students, according to a recent survey from the Games and Learning Publishing Council. Another recent study published in the Proceedings of the National Academy of Sciences found that playing action-based video games “substantially improves performance in a range of attentional, perceptual and cognitive tasks.” And in recent conversations with THE Journal, teachers across the country are reporting improved student engagement, attendance, behavior and performance whether students are playing an educational game designed for classroom use, a massive multiplayer online game like World of Warcraft or a popular game such as Minecraft.
lar, you know that it is all things motion,” said Messer. To teach motion, she needed to cover the concepts of inertia, Newton’s laws, friction, gravity and mass. “That could be a semester’s worth of topics, but we had 14 days to cover them,” she said. “And so we were looking for tools that would help us introduce these concepts, interact with the concepts, play with the concepts and really get to feel what these things mean in an efficient manner.”

As part of “It’s Rocket Science,” Messer used Motion Force from Filament Games, a game-based curriculum development company based in nearby Madison, WI. Motion Force included a teacher’s guide, a student guide and curriculum support materials, and Messer discovered that it was a perfect fit for the seminar on motion. When students played the game, they had to predict how a ship was going to move; they had to figure out much force to apply and how long to apply the force in order to get the ship to move where they wanted it to; and they had to deal with variables such as obstacles in the path, the effect of the ship’s mass on its motion and the number of passengers on the ship. As they played, they had to consider balanced and unbalanced forces, mass, inertia and other concepts associated with motion. After playing the game, Messer and the students had conversations about Newton’s laws and what they had discovered through the process of playing the game. Messer and her students also completed some of the associated offline activities from Filament Games’ curriculum support materials.

For video games to be an effective teaching tool, Messer believes they should be integrated into the curriculum rather than used as a supplementary add-on activity. “It should be set up with warm-up activities, it should be assessed, and there should be activities to wrap up to make sure that kids really have learned what we hoped they would learn, instead of just as a fun closing activity,” she said.

### Integrating Educational Video Games Into Blended Learning

According to Asante Johnson, a middle school teacher at Wheatley Education Campus in Washington, DC, video games can be an effective motivational reward for learning. She uses a program called i-Ready in her math remediation class. When students answer a set of questions correctly, they get to play a three-minute video game on the computer. “It motivates the student to continue to move forward with mastering concepts, because it’s all about content and mastery,” Johnson said.

But like Messer, Johnson also makes video games an integral part of her lesson plans. Wheatley Education Campus is a blended learning school, and Johnson uses a station rotation model in her sci-
ence class. Over the period of one week, students rotate through a series of four stations related to the science concept they are learning that week. Johnson uses video games and virtual labs at two of the stations.

One of those stations is called the “Organize It” station, where students can play a video game related to the week’s concept. During or after the game, students fill in a structured graphic organizer that Johnson created for them. “There are various essential questions that students have to answer as they go through a unit, and the graphic organizer helps them answer those questions,” she said.

The other station is called the Scientific Exploration station, where students use the computer to discover the solution to a question. “The program takes them through the scientific method step-by-step to explore that question and then solve it all online through a video game.” Johnson is working with Dig-It! Games, a game-based learning company, to develop some new chemistry games, and she will be piloting those games at the Organize It station in the fall.

Johnson estimates that 85 percent of learning in her class takes place in a virtual environment, and she believes that video games help students learn scientific concepts. “In science we have this approach called ‘activity before concept,’” meaning you need to work with the concept, play with it, see it, touch it, feel it, all before the teacher presents the full-fledged content so students have a point of reference,” she said. “And these video games lend themselves well to that type of instruction.”

**Bringing Massive Multiplayer Online Games Into the Classroom**

While Messer and Johnson are using video games created specifically for the classroom, other teachers are taking games designed for entertainment and adapting them for classroom use. World of Warcraft is a massive multiplayer online (MMO) game, the kind that high school students stay up until the wee hours playing in their parents’ darkened basements. But Lucas Gillispie, the director of academic and digital learning at Surry County Schools in Dobson, NC, has found a way to bring those MMOs into the classroom.

He first used World of Warcraft at an after-school program to provide enrichment for at-risk learners in his previous position at Pender County Schools in Burgaw, NC. After he offered the game, “the attendance improved among those students, we had improvements in behavior, and some of the teachers even told us that they saw improvement in their academic performance,” said Gillispie.

After the success of the after-school program, Gillispie and a teacher at the school, Craig Lawson, wrote a yearlong language arts curriculum based entirely on World of Warcraft. “It was aligned to the Common Core standards for eighth-grade language arts,” Gillispie said, “and it used World of Warcraft and gameplay experience as a context for reading and writing, including a lot of journaling and reflective writing, and digital media skills as well.” The curriculum is available as a free PDF download from the World of Warcraft in School site under a Creative Commons license.

The curriculum focuses on the hero’s journey. Students begin by researching the lore and mythos of the game by reading online wikis, game manuals and novels based on the World of Warcraft universe. Once they create their in-game characters, they write background stories for their characters, as well as fan fiction. “We drew parallels between their experiences as a character in the story of World of Warcraft and Bilbo’s journey as a hero in The Hobbit,” said Gillispie. Students also created Machinima, which are video game-based movies. To do this, they started with a digital storyboard, wrote a script and then created the movies in World of Warcraft.

The WoW class was an elective, but according to Gillispie, the teachers of the regular language arts class saw improvements in the game-playing students. “We
Last year, fourth-grade students designed a zoo in Minecraft at Momilani Elementary School in Oahu, HI, where more than 240 students attend the gaming lab each week.
had those teachers coming and telling us, ‘Hey, these kids are using vocabulary that I don’t hear typical middle schoolers using.’ And they were using some of the vocabulary that was a part of these game worlds,” said Gillispie. “We had students starting to use.

through sixth grades. His fourth-grade students designed a zoo in Minecraft. He gave them a million-dollar budget, and they had to purchase their land, materials and animals for the zoo. Students had to research the biomes for each animal and he asked for four student volunteers to accompany him. Sixty students volunteered, so he had them write reflections on their experience in his lab, and he said, “It was incredibly hard to cut it down to four because I wanted to take all of them, but

When Lucas Gillispie saw how using games improved attendance and behavior at an after-school program, he and a colleague wrote a yearlong language arts curriculum based entirely on World of Warcraft.

some of this vocabulary in their writing and in their talking and in their other classes.”

Teaching Common Core With Minecraft

Another popular video game that teachers have adapted for the classroom is Minecraft, the ubiquitous blocky online world for building and exploration. So many teachers have discovered the educational value of the game that it even has its own educational version, called MinecraftEdu. And Microsoft recently announced Minecraft in Education, an online portal for teachers using the game in their classroom.

Shane Asselstine, the curriculum and technology coordinator for Momilani Elementary School in Oahu, HI, started using Minecraft about three years ago, as part of a before- and after-school program. Asselstine’s first project asked students to work collaboratively to re-create the school campus in Minecraft.

The project was a success, and Asselstine spent the summer going through his math standards to see if he could teach all of the Common Core math standards using Minecraft. “And as I turns out, there were only a couple of standards from grade three to six that I couldn’t figure out how to teach right away,” he said, “and since then I’ve learned about modifications and things like that, so I’m pretty sure that now I’d be pretty hard-pressed to find one of the standards I couldn’t teach with Minecraft.”

During the 2014–2015 school year, Asselstine used Minecraft for project-based learning with his students in third

that’s the kind of response that this game-based learning is getting from students.”

Lucas Gillispie also sees momentum building behind the use of video games in the classroom, and he encourages teachers to connect with each other and share their ideas about how to make it work. “If there are teachers out there that are interested in leveraging games for learning, they’re not alone,” he said. “This is a movement, really, so I would really encourage them to reach out and connect to other educators and find those resources and find those communities of educators who are doing this. It’s so important.”

Leila Meyer is a freelance writer based in British Columbia, Canada.
SAVE THE DATE!

Mark your calendars and plan to join your peers and colleagues at FETC 2016! Fuel your inspiration for innovative teaching, and join the growing FETC community to connect, collaborate, create and improve teaching and learning in the 21st century!

REGISTRATION OPENING SOON!

Check www.fetc.org for all the latest information on this year’s event.
beyond the classroom,” said Moore.

5) Take the first step. As Moore put it, “We have had several reluctant teachers who, after implementing their first blended learning lesson, wondered why they hadn’t tried the approach sooner.”

Moore cautioned against waiting for the ideal time to launch a blended learning initiative. “We will never have all of the devices, all of the access points, the perfect content, the perfect classroom setting, and all the stars aligned in just the right way,” she said. “What we will always have are students who are counting on us as education professionals to lead the way, and that starts with a first step.”

Blending From the Beginning

Relatively new charter schools have the luxury of starting with the primary goal of establishing a cogent blended learning curriculum. The Village Green Virtual Charter School in Providence, RI, launched in September 2013 with a three-pronged approach.

“Number one is maximizing technology in courseware,” said Robert Pilkington, the superintendent at Village Green Virtual. “Number two is maximizing teacher efficacy in the face-to-face role, and three is providing supreme equity in access for all kids with a rigorous, high-quality curriculum.”

John Butler, the director of academic planning and logistics at Village Green Virtual, reported that actual class instruction is made up of 60 percent online and 40 percent face-to-face teaching. Village Green officials believe the 60/40 approach makes sense for schools looking to boost their blended learning efficacy, but they are by no means tied down by the ratio.

Kevin Cordeiro, social studies teacher in the Second Learning Center and mobile learning coordinator at Village Green, puts it this way: “The way blended learning plays out in the classroom is you are trying to have little to no false boundary between kids learning digitally or in a traditional method. The kids don’t distinguish between learning in a traditional way, or using some type of digital medium, or using a mobile device. The kids use every resource available to them for the best possible education.”

13 Keys to Successful Blended Learning

Educators share their best practices for tech-enabled pedagogy, from building capacity to implementing lessons to supporting teachers and students.

RANSFORMING A MISHMASH of educational technologies into a coherent “blended learning” model is fast becoming the holy grail of modern education. With so much software and hardware already in place, making blended learning work is less about acquiring technology, and more about changing mindsets.

Susan O. Moore, supervisor of blended learning at Meriden Public Schools (CT), breaks the implementation of blended learning into five stages:

1) Build the capacity of staff members to support each other in the transition to a blended learning environment. Provide opportunities for staff to visit each other’s classrooms and collaborate.

2) Allow teachers and students the freedom to fail and learn from mistakes.

3) Engage student experts to support each other and their teachers in learning new technologies. “We had students present on technology tools to teachers during one of our professional development days,” Moore said. A student introduced her to Google Keep, which has become one of the apps she uses most.

4) Encourage students and teachers to take charge of their learning. Providing control over “time, place, path and/or pace” comes with responsibility. For example, a student might have access to digital content during the high school pep rally, but is that the best time and place to retain the information? Teachers may need additional training in using rotation models or creating digital content. “They need to model extending learning beyond the classroom,” said Moore.

5) Take the first step. As Moore put it, “We have had several reluctant teachers who, after implementing their first blended learning lesson, wondered why they hadn’t tried the approach sooner.”

Moore cautioned against waiting for the ideal time to launch a blended learning initiative. “We will never have all of the devices, all of the access points, the perfect content, the perfect classroom setting, and all the stars aligned in just the right way,” she said. “What we will always have are students who are counting on us as education professionals to lead the way, and that starts with a first step.”
Finding the Right Blend

Meriden’s Moore said that a vital step in blending learning is realizing that “blended” does not always mean “high-tech.” She explained, “Many people equate blended learning with online learning — all digital, all the time. Blended learning is a balance between digital and classroom learning. The balancing point may vary from student to student. Blended learning allows for variation supported by digital tools.”

Assuming districts have a baseline level of adequate digital tools, Moore sees no reason why teachers and administrators can’t immediately take steps to better shape or create a blended learning model. In the classroom, the program can take many forms, such as extra help for algebra. “Many students struggle with Algebra 1 as high school freshmen,” Moore said. “One teacher [in Meriden] is using a combination of self-created and existing videos to teach and reinforce concepts. Quick response (QR) codes direct students to material that allows them to learn or apply a content standard. Students are able to access this content anytime, anywhere, using school-issued devices.”

To support students’ learning, the teacher then rotates through the class offering small-group instruction. “Once students have demonstrated success in the ‘apply’ activities, they complete the lesson assessment through a randomized quiz in Moodle,” Moore said. If students demonstrate mastery, they continue on to the next lesson. If not, the teacher provides additional support.

For Traci Blazosky, a fourth-grade teacher at Clarion Area Elementary (PA), being prepared to offer these “multiple pathways to engage in content” is probably the most important step toward successful blended learning. Additional steps from Blazosky (who teaches at a BYOD school) include the following:

1) Knowing the resources and technology students can access at home, as partially determined by a Google Doc survey for parents at the beginning of each school year;
2) Knowing your objective and thinking about the route you will take;
3) Knowing what technology must be added to further engage students; and
4) Modeling how you want the process to look in your classroom. Some teachers go with a flipped classroom approach where they show a teacher-made video on a concept. The students watch and get an idea of what they will be learning, then explore it from there.

In the classroom, Blazosky’s blended learning model evolves depending on the topic she is teaching. In a recent social studies lesson, she used a Discovery Social Studies online techbook, which employed blended learning to teach students about the Boston Massacre. “Using multimedia, we go to Discovery, BrainPOP and interactive simulations online,” said Blazosky, who also serves as an adjunct professor at Wilkes University (PA). “That really let my kids dig deep and differentiate between fact and opinion.”

Using the blended approach, students examined multiple points of view from primary sources while other students “analyzed pictures and answered questions about what they saw, while another group did a simulation online, and another small group looked at facts based on results of the trial.”

The blended approach has been effective for Blazosky, significantly boosting her students’ test scores. “On a scale of 3, my growth was 2.81 on the Pennsylvania Value Added Assessment System (PVAAS), which tracks the growth of my students,” she enthused. “My principal said, ‘Wow, have you checked out your PVAAS scores? You’re my hero.’ I have always done this blended approach to learning, and I really feel my students have shown better results because of it.”

Scott Ellis, CEO and co-founder of nonprofit group The Learning Accelerator, believes that results like Blazosky’s can happen all over the country, and his mission is to help implement blended learning on a nationwide scale. He sees differentiated learning as one of the many benefits of truly blended learning.

“We want to make learning competency-based so kids move forward at their own pace as they master content,” he said. “You have 30 kids in a classroom who are at different places in their learning, and now students can learn something at one station, and 30 seconds later, when they talk to the teacher at the next station, the teacher can look at the results and help the student. We’re not all doing this yet … so while we’ve made great strides, there is a lot more to go to get the transformation in teaching and learning that we’re all looking for.”

Greg Thompson is a freelance writer based in Fort Collins, CO.

TRIUMPH LEARNING OFFERS BLENDED LEARNING GRANTS

Like all ed tech projects, blended learning moves faster with some money behind it. That’s why Triumph Learning is offering districts up to $5 million in a 1-to-2 matching grant for districts. THE Journal spoke to Triumph’s chief marketing officer Jieun Choe to get the details.

THE Journal: Can you explain the 1-to-2 match?

Jieun Choe: For every two dollars that a district spends on blended learning implementation with Waggle, we provide one dollar to support their investment in Waggle and professional development.

THE Journal: Why are you offering this grant?

Choe: Successfully implementing blended learning takes significant investment in resources and training, beyond purchasing a solution, so we wanted to provide more support to districts. Furthermore, our curriculum and implementation teams work closely with districts and schools to determine and refine their implementation models and offer guidance on integrating Waggle with teachers’ lessons. By providing this higher level of support, we feel that districts will be better set up to experience academic success, high engagement and marked student growth with Waggle and blended learning.

THE Journal: How can districts apply for this grant?

Choe: Districts that are interested in applying should fill out the form at http://bit.ly/K7LWQ8, and then we will be in contact with them to start the application process. The application is open until Sept. 30, 2015.

The blended approach has been effective for Blazosky, significantly boosting her students’ test scores. “On a scale of 3, my growth was 2.81 on the Pennsylvania Value Added Assessment System (PVAAS), which tracks the growth of my students,” she enthused. “My principal said, ‘Wow, have you checked out your PVAAS scores? You’re my hero.’ I have always done this blended approach to learning, and I really feel my students have shown better results because of it.”

Scott Ellis, CEO and co-founder of nonprofit group The Learning Accelerator, believes that results like Blazosky’s can happen all over the country, and his mission is to help implement blended learning on a nationwide scale. He sees differentiated learning as one of the many benefits of truly blended learning.

“We want to make learning competency-based so kids move forward at their own pace as they master content,” he said. “You have 30 kids in a classroom who are at different places in their learning, and now students can learn something at one station, and 30 seconds later, when they talk to the teacher at the next station, the teacher can look at the results and help the student. We’re not all doing this yet ... so while we’ve made great strides, there is a lot more to go to get the transformation in teaching and learning that we’re all looking for.”

Greg Thompson is a freelance writer based in Fort Collins, CO.
Califone International’s new stand is designed to hold tablets and large smartphones at the optimal viewing angle to allow students to use a Bluetooth keyboard with their mobile device. According to the company, the new TPT tablet stand can prop up tablets, mini-sized tablets and oversized smartphones in either portrait or landscape position. The stand folds into a compact size for storage and transport.

**ITUNES U**

Apple’s updated iTunes U app includes several new features. A discussion capability allows students and teachers to have 1-to-1 conversations within the app. Homework hand-in provides time-stamped delivery of term papers, book reports and problem sets. Educators can now import teaching materials and student work directly to iTunes U from native and third-party apps. An integrated gradebook lets teachers know when a student’s work is complete and ready for review.

**PLAYAWAY LAUNCHPAD TABLET**

Follett School Solutions is now the exclusive pre-K-12 distributor of Playaway Launchpad, a learning tablet that delivers ad-free learning apps grouped together by subject area, theme, grade level and age. Every Launchpad is custom-curated with apps chosen to address the learning needs of students from pre-K through fifth grade. The content collection spans six learning areas, including English language arts, math, science, language learning, critical thinking and creativity.

**DTEN WIRELESS DISPLAY**

DisplayTen’s 70-inch wireless interactive display, called DTen, allows the user to plug a dongle into a USB port-enabled device to share its screen on the display. No pre-installation of software is required. Users can write on the display, which has 10-touchpoint recognition, with a Bluetooth pen or a finger. The LED backlit display has a 1920 pixel x 1080 pixel resolution.
CLASSFLOW ONLINE CLASSROOM
Promethean has updated its online classroom service ClassFlow to better address blended learning environments. The latest iteration of ClassFlow, a classroom delivery application, allows schools to assign students their own accounts and provides updates to the teacher interface designed to streamline certain operations. The “school edition” of the program, which offers the student accounts, lets students access assignments and other materials after school hours and provides a “digital backpack” — a cloud-based storage drive where students can upload and organize their own files.

MAKERBOT IN THE CLASSROOM
MakerBot in the Classroom: An Introduction to 3D Printing and Design is a handbook designed to provide educators with a wide variety of ideas, activities and projects. The book includes an introduction to 3D printing and a range of hands-on 3D design lesson plans. It is available as a free digital download for registered MakerBot customers, and a sample project chapter is available free to anyone who registers on MakerBot.com.

REFLECTOR DIRECTOR
Reflector Director from Squirrels is a companion iOS app to Reflector 2, a wireless screen-mirroring and streaming receiver application that displays mobile device content through Google Cast, Apple AirPlay and Squirrels’ own AirParrot 2. Reflector 2 allows the user to wirelessly share data from a little screen to a big screen. Reflector Director refines the display experience by allowing the teacher to step away from his or her computer and control what’s shown from an Apple iPad or iPhone.

OTTERBOX UNLIMITED PROTECTIVE CASE
OtterBox’s UnlimitEd protective cases are now available for iPad Air and iPad Air 2. The cases cushion tablets with two materials molded into one layer for drop protection. Both cases come standard with a built-in screen protector to guard against scrapes and scratches. A clear back allows for visible asset tagging. An integrated stand is designed to accommodate typing and allow for two viewing angles: one for typing notes and one for collaborative classroom activities.
SCHOOL INDEX

Albemarle County Public Schools (VA) ..................... 7
American Fork Junior High (UT) .......................... 16
Barrow Elementary School (GA) .......................... 10-12
Clarion Area Elementary (PA) ............................ 20
Clark Street Community School (WI) ...................... 20
Clarke County School District (GA) ....................... 10-14
Clinton County High School (MI) ......................... 12-14
Coachella Valley Unified School District (CA) ........ 4, 7
Corinth Middle School (MS) ............................... 18
Fairfax County Public Schools (VA) ....................... 16
Hilton Head Island Middle School (SC) ................ 18
Iredell-Statesville School System (NC) .................. 4
Kent School District (WA) .................................. 7
Meriden Public Schools (CT) ............................... 26-27
Miomir Elementary School (HI) ......................... 23-24
Morrill Math and Science School (IL) .................... 14
Pandora-Gilboa High School (OH) ....................... 32
Pender County Schools (NC) ............................... 22
Richland County School District Two (SC) ............ 4
South Woods Elementary School (FL) .................. 4
St. John’s County School District (FL) .................. 4
Surry County Schools (NC) ................................ 22
Tilden Career Community Academy (IL) .............. 14
Village Green Virtual Charter School (RI) ............. 26
Wheatley Education Campus (DC) ....................... 21
Whit Davis Elementary School (GA) ................... 12
York County School Division (VA) ....................... 34

COMPANY INDEX

Apple ...................................................... 28-29
Blackboard ................................................ 8
BrainPOP ................................................. 27
Bretford ................................................... 14
Califone International ..................................... 28
Citrix ..................................................... 34
DigIt! Games ............................................. 22
Discovery Education ...................................... 18, 27
DisplayTen ............................................... 28
eChalk ................................................... 8
Filament Games ......................................... 20
Follett School Solutions ................................ 28
Google ................................................ 26-27, 29
Innovation ................................................. 18
MakerBot ................................................ 28
Mediatechologies ........................................ 14
Nurph.com .................................................... 32
Pearson .................................................... 16
Promethean ............................................... 29
Scholastic ............................................... 14
Smith System ........................................... 14
Squirtles .................................................. 29
Starbucks ................................................... 8
Steelcase .................................................... 12-15
Triumph Learning ...................................... 27
TweetChat.com ......................................... 32

This index is provided as a service. The publisher assumes no liability for errors or omissions.
Two years ago, Mark Suter invited his high school students to start an entrepreneurial tech club that would provide Web design, video production and staff training to community businesses and nonprofit organizations. That club, Rockettech, has exceeded even Suter’s expectations, grossing more than $14,000 in donations for its work — money that is reinvested into the club.

**THE Journal: How did you come up with the Rockettech idea?**

**Mark Suter:** I grew up in a small-business environment. My family has a produce business that encourages trying new things to differentiate itself from the supermarkets. Once I started teaching, I realized that my students are really sharp, with the energy and creativity to be entrepreneurial. They already learn the skills in Web design, video production and programming. So why not let them test their skills in the real world and see if we can treat this classroom like a small business?

**THE Journal: What’s an example of a client your students have taken on?**

**Suter:** This past year, the Allen County Economic Development Group entrusted us with making the website that potential companies use to see if they’re going to set up their business in our county. So there is some actual economic impact from the work that the Rockettech kids are doing. We talk about the fact that this isn’t a simulation; you’re affecting real businesses. We’ve done work for churches, several healthcare clients, the power company … a wide range of private and public sector clients.

**THE Journal: Did you expect Rockettech to fail?**

**Suter:** Yes. My thinking was that these are kids whose experience so far has been to study for the test, take the test, then move on to the next class. What’s going to happen when I stick them in front of a client who is dependent on them to do a good job or it will reflect poorly on the business?

**THE Journal: Why has it succeeded?**

**Suter:** When the kids come into class, it doesn’t smell like school to them anymore. They’re thinking in an innovative way and we have a mutual trust. I trust that if I give them something, they’re going to do everything they can to succeed. And they know that if they screw up, I’m not going to be angry with them if they’re doing all they can to be successful; I’m going to show them where they made their mistake and they’re going to try again.

**THE Journal: How has the experience been?**

**Suter:** Messy, and I like it that way. Standardized tests tend to be very clear-cut for students. My class is a little more like they’ll experience once they take a job somewhere, where if you’re going to be trying to innovate and grow, it’s going to be messy. I make myself vulnerable to try to model the idea that it’s okay to fail and make mistakes, because that’s how you learn.

**THE Journal: What kinds of jobs?**

**Suter:** Web design and video production are the two main things. Our business model with the websites is we create it in a content management system, then we tell the company up front that we’re going to train you in how to run your website, whether through personal meetings or customized video tutorials, because we’re not in the business of keeping up websites. We can’t be, because my employees keep graduating. So we set up the hosting, design the website, then train as many people as they’d like at that company on how to maintain it. And we have a donation pledge that serves as our contract, which the students also negotiate.

**THE Journal: You ask for donations?**

**Suter:** It’s kind of a professional understanding. On the donation pledge form it says, if we perform these services for you in this time frame, do you agree to donate x amount of dollars? We have milestones laid out, a timeline established, and then when the product is complete we have a meeting with the client and we ask how they feel about the service: Was it professionally done, was the communication professional, and if so, are you willing to donate the original amount we agreed to? If not, what can we do to improve or fix it? We haven’t had anybody yet who didn’t donate in the end because they didn’t like the service. They always have given us a chance to improve it until it is right. And the businesses really enjoy working with the kids. They understand that things might not be perfect on the first run, but they also know that in the end they’re going to be happy with what we deliver.
Not a Subscriber to THE Journal?

Sign Up Today...
It’s Free!

For details, visit:
thejournal.com

Available in Print or Digital Format
DOUGLAS MEADE, DIRECTOR OF INFORMATION TECHNOLOGY, YORK COUNTY SCHOOL DIVISION (VA)

For more than two decades, Douglas Meade has headed IT at York County, which serves nearly 13,000 K-12 students. In the fall of 2009, the division began a two-year process of implementing a desktop virtualization initiative to enhance mobility for students and teachers—and, as an added benefit, to pave the way for BYOD as an alternative to a 1-to-1 rollout.

THE Journal: What led you to decide to go in this direction?
Douglas Meade: Around 2008 we were hearing complaints from teachers that were legitimate, and what they boiled down to was: We want access to our stuff. Every classroom had something called an I-station that was hooked up to the LCD projector in the ceiling. It had a VCR, a document camera, an “ink link” where they could write something that showed up on the screen and save it, and they could walk into the classroom and put their notebook computer on that docking station that was connected to all of these devices and the projector. They could teach, take the computer off the docking station and take it home with them. However, for security purposes we didn’t allow them to connect to an outside network. So they could just use it in a standalone mode away from school with whatever it was that was installed on it. What they really wanted was to be able to work at home just like they could work at school. We had had our finger on the pulse of some of the early virtualized desktops, so we started looking more closely to see if that technology had gotten to where we thought it needed to be to serve the classroom.

THE Journal: What were your concerns?
Meade: The two biggest were first, would it stream video well, because streaming video is something that is a necessity in K-12; and second, there are a lot of instructional applications that are not well written, and trying to get those to work virtualized, streamed or hosted was a bit of a challenge. But we looked at it and decided on the Citrix HDX technology. And that became a game-changer for us.

THE Journal: How so?
Meade: When we brought in technology, teachers had to be in their classroom to get to their electronic gradebook or to incorporate certain applications into their lesson plans. Students had to be in school to use applications we were making available to them. In many cases they had to be in a certain lab at a certain time. If you were taking Photoshop, you had to be in the Photoshop lab to do any work. Now, on the other hand, there’s nothing done with technology in the school that can’t be done from anywhere and on any device.

This has given students and teachers total mobility.

THE Journal: How does virtualization facilitate BYOD?
Meade: If you have a 1-to-1 initiative, you’ve given students a computer, and when you allow them on your network, you’re going to have all the risks associated with that: corruptions, viruses and other problems. As with teachers, it would have been a big challenge to let students take the technology home, put it on an outside network and install any applications they wanted. When our instructional department started talking about BYOD, we were trying to figure out how we were going to secure things. Then we thought, why don’t we treat the entire environment, access to your applications, your files and our network printers, just like if all that had been locally installed on a notebook computer that you had gotten off of a cart. It made our life a lot simpler. So the desktop virtualization and the access from anywhere, any time, any device … that was our driving force. The ability to do BYOD was gravy, something we realized after the fact.

MY TOP 3...

TECH TRENDS THAT PREPARE STUDENTS FOR COLLEGE OR THE WORKFORCE

Access to networks: Students will always be connected, and with that connectivity comes responsibility. The way connectivity is used for social or entertainment purposes is different from the way connectivity is used for work, whether school or career.

Access to devices: Students have a variety of devices at their disposal for various purposes: from a quick Web lookup to composing complex documents. Stop calling BYOD an initiative. It is no more of an initiative than paper and pencil is an initiative.

Access to applications: The mission-critical applications used by schools and employers are available all of the time and on any device. Students will move seamlessly between locally installed apps to hosted applications and/or virtual Windows desktops — whatever is the right tool to get work done.

Do you know a K-12 technology leader or tech-savvy administrator or teacher we should profile? Tell us! E-mail cpiehler@1105media.com.
Subscribe Today [IT’S FREE!]

Choose a T.H.E. Journal Newsletter…

T.H.E. News Update
Spotlights the latest in technology trends, tools and analysis for K-12 instruction and administration.

FETC Converge
Covers emerging ed tech trends and how schools and districts across the country are using technological tools, changing educational policy, and implementing pedagogical strategies.

K-12 Mobile Classroom
Research and best practices for incorporating mobile technologies into K-12 instruction.

IT Trends
The latest information about networking, databases, hardware, developer tools, data security, wireless, virtualization and cloud computing.

T.H.E. 21st Century School
Focuses on smart classroom technologies, e-learning tools, audiovisual technologies, hardware, display devices, infrastructure and the interactive classroom.

Common Core Tech Update
An in-depth view of the technology and professional development issues around implementation of the new Common Core State Standards.

SIGN UP NOW:
thejournal.com/newsletters
5 THINGS TO KNOW ABOUT CLASSROOM TECHNOLOGY

1. Acquiring tomorrow’s technology with today’s budgets

2. Choosing the perfect projector based on your classroom’s layout

3. Calculating your projector’s true cost of ownership

4. Delivering broadcast quality at minimum cost

5. Enhancing equipment productivity by leveraging your network

As a global leader in professional A/V solutions, Sony has the tools to make lectures, content creation and collaboration seamless, effective and transformative. And our expanded Eye on Education® program provides educational discounts on projectors that help you deliver more value for every dollar, with extended warranties, planning tools, promotional programs and no-down-time loaners. Sony: higher tech for higher learning.

Take advantage of all the resources at sony.com/eyeoneducation.