BLENDED LEARNING IN DC PUBLIC SCHOOLS
HOW ONE DISTRICT IS REINVENTING ITS CLASSROOMS

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CASE STUDIES IN DIGITAL LEARNING
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Foreword

I
t is no secret that technology has transformed just about every aspect of our lives, from how we watch movies and listen to music to how we interact socially to how we buy cars and clothes. The same cannot be said, however, for America’s K–12 school system. While advances in modern technology offer an unprecedented set of tools to reinvent the traditional classroom, in practice each new generation of education technology has failed to do so.

In our book Breakthrough Leadership in the Digital Age (Corwin, 2013), Kaplan’s Bror Saxberg and I propose a smarter way to tap education technology’s capabilities to transform schooling. Too often leaders and educators have used new technologies to tinker with outdated practices rather than establish new and better ones. Instead, school leaders ought to become “learning engineers” by identifying the challenges they want to solve, finding solutions in relevant science, and then exploring how technologies can enhance those solutions. As Bror and I write, when used correctly, technology can make learning more affordable, available, reliable, customizable, and data rich.

To illustrate how our ideas might play out in the field, AEI has commissioned case studies exploring how a school and a district think about technology’s role in transforming schools. In this case study, my AEI colleagues Daniel Lautzenheiser and Taryn Hochleitner look closely at District of Columbia Public Schools (DCPS) forays into the digital learning world. In particular, DCPS has chosen to experiment with blended learning, which combines a mix of online learning and traditional teacher-led instruction. Lautzenheiser and Hochleitner are especially keen to zero in on the folks in the DCPS central office, the teachers, and the principals—those on the ground who grapple with the hard work of transforming DC classrooms. In doing so, they profile both the promising opportunities of blending learning and some of the challenges DCPS and similar urban districts face in getting it right.

Lautzenheiser and Hochleitner explain, “In DCPS, rather than directing all schools to pursue the same blended learning model, [the district has] embraced a more organic approach, encouraging such a transition in schools they perceive to be most willing and able to do so. . . . They seem particularly interested in using it as an improvement strategy in traditionally underperforming schools, where the administration is willing and the culture is ripe to try something new and bold.” The paper includes profiles of three ways of using blended learning in three different schools: station rotation at Randle Highlands Elementary School, the novel Teach to One math program at Hart Middle School, and the use of Discovery Education’s online techbooks at Anacostia High School. Despite inevitable challenges such as technical glitches, helping teachers navigate new tools, and insufficient hardware, the authors conclude that “the future is bright” when it comes to blended models in the nation’s capital.

We hope this case study is helpful in thinking about what it takes to implement a thoughtful blended learning strategy in a major urban district. I hope you will also take a look at the other paper in this series on Philadelphia’s Workshop School, written by Matthew Riggan, one of the school’s founders. For further information on Daniel and Taryn’s paper, they can be reached at daniel.lautzenheiser@aei.org or taryn.hochleitner@aei.org. For additional information on AEI’s education policy program, please visit www.aei.org/policy/education or contact Lauren Empson at lauren.empson@aei.org.

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Blended Learning in DC Public Schools: How One District Is Reinventing Its Classrooms

By Daniel K. Lautzenheiser and Taryn Hochleitner

It is a crisp, bright day in early November in Southeast Washington, DC. The setting is Anacostia High School, a 697-student Title I school in DC's Ward 8 that has long been one of the district’s most chronically underperforming schools. After giving a brief introduction to Japan’s geography and major cities, the social studies teacher we are observing asks her ninth-grade students to each pull out a netbook from a cart along one of the classroom walls and log into an online portal. The portal is robust. Students can access an array of multimedia tools such as videos and interactive maps far beyond the scope of a printed textbook. They can request to hear passages read aloud and click on bolded terms to view their definitions. Each student can log in with a unique password, allowing them to customize their portal by taking notes and highlighting, and they can take assessments online for immediate feedback. Students can access their portal from anywhere, including at home, and teachers can track individual student progress.

Yet, as we watch, the students log in not with unique student-specific IDs but with generic ones. It takes one student almost five minutes to correctly enter the password required to log in to the computer itself. Despite the online assessment capabilities, the teacher asks students to answer questions on a paper worksheet, meaning she will have to review each one by hand that night. And at one point a student has trouble understanding a word. With the entire scope of human knowledge just a 0.21-second Google search away, the student gets out of her chair, walks over to a bookshelf, picks up a dictionary, and starts slowly flipping through the pages.

That particular anachronism—a 21st-century student turning to Merriam-Webster instead of Wikipedia—highlights both the massive potential and the stark realities of digital learning in today's classrooms. Digital learning uses new technologies such as laptops, iPads, and online content to enhance student learning. Many believe such practices have the potential to dramatically improve the learning and teaching experience, and it seems every day heralds a new story of school districts purchasing iPads in bulk or enthusiastic accounts of the next revolutionary online tool.

But incorporating new technologies into schooling in a way that actually improves learning is not as simple as dropping laptops into a classroom and hoping for the best. It is hard work, requiring a district or school to provide ample training for teachers, make smart decisions on which products to use, and be sure any new technological tools help (and do not hinder) academic goals, among a host of other considerations.

Many highly publicized accounts of successful digital learning efforts tend to spotlight the bold vision of a pioneering school or district leader, leaving less room for a description of what central office and school staff must do behind the scenes to make those visions a reality. Such stories also tend to focus either on charter school networks (such as the San Jose–based Rocketship Education) or on smaller traditional school districts (such as Mooresville Graded School District in North Carolina, whose one-to-one computer-to-student initiative has attracted national attention and a

Daniel Lautzenheiser is the program manager in education policy studies and Taryn Hochleitner is a research associate in education policy studies, both at AEI.
keynote address from President Obama). These efforts should be applauded, but such examples tend to be more the exception than the rule when it comes to the realities facing most schools.

In this paper, then, we ask: what does it take to pursue a meaningful digital learning strategy in the large, urban districts that educate a significant percentage of our nation’s kids? Thanks in large part to the tenure of former schools chancellor Michelle Rhee, DC has been in the national spotlight for its pursuits in teacher accountability and charter schooling, and it is seen by many observers as one of the country’s leading districts in school reform.

How does digital learning fit into this school reform agenda? What progress has the district made, what obstacles do its leaders face, and what lessons have they learned? Answers to these questions will illustrate some of the steps other similar urban districts must take as they grapple with the possibilities and challenges of digital classrooms.

**Welcome to DC**

Washington, DC, enrolled more than 80,000 students in 232 schools in the 2012–13 school year. More than 40 percent of those students were in charter schools, leaving just over 45,000 students in 111 schools in the District of Columbia Public Schools (DCPS)—a large district, to be sure, but smaller than the likes of New York City (995,000 students) or Los Angeles (667,000 students). Demographically, the student body is 72 percent black, 14 percent Hispanic, and 10 percent white. Ten percent of students are English-language learners. In 2012, the district’s high school graduation rate was 56 percent.

To understand DCPS efforts in digital learning is to see first and foremost how they fit into the larger reform ecosystem Chancellor Kaya Henderson is fostering. In 2012, Henderson and Mayor Vincent Gray announced a five-year strategic plan to improve DC schools. Called “A Capital Commitment,” the plan set five goals: increase academic achievement, invest in chronically struggling schools, increase the high school graduation rate, improve student satisfaction, and increase enrollment.

The goals are ambitious. The first, for example, aims for at least 70 percent of students to be proficient in reading and math by 2017 (only about 50 percent of students are at that level currently). In addition to the Capital Commitment plan, for the 2013–14 academic year DCPS has specific goals to increase family engagement, attract highly qualified teachers and principals, and improve literacy instruction. Collectively, these goals drive most of the district’s current initiatives, including revamping libraries in 45 elementary schools to foster small-group literacy instruction, extending the school day in nine schools, and placing assistant principals for literacy and reading specialists in 11 schools.

Using digital learning to transform the educational experience is hard work.

Another initiative the district is pursuing to advance its academic goals is blended learning, a form of digital learning that combines traditional teacher-led instruction with online instruction on the part of the student. Brian Pick, head of the DCPS Office of Teaching and Learning—which covers all matters of professional development, formative assessments, enrichments, intervention, and curriculum design—explains, “Kaya has been a strong supporter of blended learning as a solution to accelerate student achievement. . . . We believe that ed tech and the blended learning solutions that are out there will help us reach our goals in the short timeline we have.” This commitment is echoed by John Rice, who oversees DCPS forays into the blended-learning world: “Chancellor Henderson has identified five capital commitments that we’re trying to reach by 2017. And we want our blended learning efforts to align with those as much as possible.”

**Blended Learning in the Nation’s Capital**

Before 2011, blended learning’s presence in District of Columbia classrooms was haphazard, appearing only in places where enterprising teachers or administrators had decided to experiment on their own; a
centralized blended-learning strategy was nonexistent. One of those teachers was John Rice, who, inspired by Michelle Rhee’s reforms, left his high school teaching job in Florida to move to Washington, DC. During his three years of teaching at Anacostia High School, he started experimenting on his own with a number of online instructional tools to help his students. DCPS began to notice, to use Rice’s phrase, the “pockets of innovation” like his own springing up scattershot in classrooms across the district.

David Rose, director of education technology and library services at DCPS, explains, “We had lots of different schools trying some blended-learning models in DCPS a couple of years ago. And we saw that we needed to really come up with an overall plan for the district of how we wanted blended learning to look in our different schools and to support those schools that had already stepped out into this area.” The financial enabler of this nascent plan was a STEM (science, technology, engineering, and math) education grant from Google in the amount of $750,000, which allowed Rose to hire the two-person department that would focus exclusively on blended learning.8

Rose recruited the young and energetic Rice to manage these efforts—a largely open-ended position that involves, as Rice describes it, “implementation on the ground, meeting with teachers, fixing hardware, providing [professional development], and figuring out what we’re going to do in the next five years.” Rice’s primary role is to be in the schools as much as possible, constantly communicating with teachers and principals who are on the ground implementing blended learning. To that end, he travels every Wednesday to the schools and classrooms under his purview in an attempt to develop rapport with teachers and principals and address the concerns that arise.

An Organic Approach. Although schools have always used some sort of technology in the classroom, whether overhead projectors or laptops or smart boards, recent
advances have opened the door to use technology for more meaningful change. The entire digital education landscape is still new and undeveloped, with schools and districts across the country trying to figure out which tools and models work best for their students. Schools that consider themselves “blended” fall across all parts of the spectrum when it comes to the amount of online versus teacher-led instruction they offer.

Rather than directing all schools to pursue the same blended-learning model, Rice and his team have embraced a more organic approach, encouraging such a transition in schools they perceive to be most willing and able to do so. While district leaders tout the presence of blended learning in all district schools, they seem particularly interested in using it as an improvement strategy in traditionally underperforming schools, where the administration is willing and the culture is ripe to try something new and bold.

As such, the blended-learning team assumes a largely supportive role, giving schools, principals, and teachers a good deal of latitude to pursue initiatives of their choosing. This approach facilitates the growth of different models, allowing DCPS to learn from early pilot programs and to gradually coalesce these disparate efforts into a more coherent strategy. DCPS staff, principals, and teachers use such words as “experiment,” “pilot,” and “vetting” to describe these efforts, suggesting this is an exploratory phase. This approach separates DCPS from other school districts that have opted to implement more prescribed digital learning models universally, such as one-to-one laptop or iPad initiatives in Mooresville, the Los Angeles Unified School District, and a number of other districts across the country. As Rice puts it, his mission is instead to “support the schools, not dictate to them what you think is best.”

In practice, this organic approach yields a diverse landscape. In a press release before the beginning of the 2013–14 school year, DCPS leadership advertised the districtwide presence of blended learning: “Blended learning, which combines the best of face-to-face teaching with the best digital resources, is an instructional model now available in all DCPS schools.”

But a more thorough description of DCPS blended-learning activity quickly becomes a laundry list of various initiatives. Every elementary, middle, and high school in the district has a computer lab, and some portion of instruction occurs in the lab each week. All DCPS elementary schools use a digital math content provider every week, and this year the district is piloting a blended-literacy program in one-third of its schools. A number of schools have implemented a station-rotation model, where students spend their classes moving between teacher-led instruction, small-group practice, and independent work online using classroom computers. Three schools—Kramer Middle School, Ketcham Elementary School, and Randle Highlands Elementary School—are using this station-rotation instruction for all core content areas.

Clearly, the experiences of those students spending just an hour a week in a computer lab differ markedly from that of those who receive their entire core instruction via the station-rotation model. Part of the challenge facing DCPS is to find the right balance between providing oversight and letting schools experiment on their own, between approving vendors to ensure quality and letting schools use the tools that are best for them, and between unifying the district’s efforts and keeping room for innovation.

Vetting Vendors. One of the most important tasks for a district or school in the digital age is selecting partners and content providers. The education technology landscape is still a bit like the Wild West. The area is flooded with a sea of vendors trying to sell their software, apps, tablets, games, portals, and e-content, yet many ventures are too new to have long-term measures of success. Some are reputable and some are charlatans, and it can be difficult for a district to make sense of it all.

When it comes to selecting the right vendors, Brian Pick emphasizes patience, especially for big districts with no shortage of willing partners: “There are groups that we’ve been dating for many years now [and] it is...
Spatial Temporal Math, or ST Math, is a game-based visual math instructional software program developed by the MIND Research Institute in Irvine, California. The 17-year-old program emphasizes visual, as opposed to language-based, instruction. While it has met success nationally, student improvement has been especially noteworthy in Washington, DC.

According to Matthew Peterson, cofounder of the MIND Research Institute, DC students who used ST Math achieved a 17-percentage-point gain on the DC Comprehensive Assessment System (DC CAS), the district’s standardized academic proficiency test taken by all students each April, versus a 4.5-percentage-point gain for students who did not use the program—a “remarkable outcome” in Peterson’s words. The results were impressive enough in the 31 schools that used ST Math last year to prompt Rice to expand it to 33 schools for the 2013–14 year. (First in Math is also seeing good results, with students who are deemed high users of the program improving their proficiency scores on the DC CAS.)

ST Math provides extensive support to teachers and schools after a contract has been established, including training on how to use the software as well as technical support. Jessica McKenzie, the ST Math representative for the DC region, estimates that she visits DC schools three to four days per week. McKenzie helps the district plan professional development workshops for teachers, delivers the actual training, and assists with the implementation of the program throughout the entire year. ST Math provides an introductory workshop for teachers, which runs three to four hours, followed by a two-hour workshop four to six weeks later, which focuses on how to use data and how to incorporate ST Math into instruction. Once a year, McKenzie meets with administrators at each school implementing ST Math, and returning teachers (those who already used ST Math for a full year) receive a 90-minute professional development session during year two.

MIND Research Institute tailors its approach for each district; McKenzie explained that DCPS opted to start implementing with third through fifth graders and gradually work down to the kindergarten level over a period of three years. The institute has aligned the software’s content to the scope and sequence DCPS prefers and provides weekly data updates on student performance to Rice and Pick. Working with MIND, Rice and Pick set benchmarks for how many hours each school needs to use ST Math, while allowing each school to set its own schedules to meet those targets.

important to be patient. Especially in a district like DCPS, a lot of people want to get in the door. It takes really good discipline to be able to say no, but continue to build the relationship in such a way that when you are ready you are firing on all cylinders.”

Selecting which companies to work with and which products to procure for the district’s schools is one of John Rice’s primary job functions. In doing so he is adamant about aligning blended-learning tools with larger DCPS priorities. For the 2012–13 school year, the district was focused on Common Core math. At the time, schools across the district used various vendors for their online math instruction. After tracking their performance over the course of the year, Rice and his team found that two vendors stood out: ST Math and First in Math. Other vendors were phased out, and now, in the 2013–14 school year, every elementary school is able to use one of these two programs.

ST Math (see sidebar) is currently in 33 elementary schools across the district. Although the $34,000 per-school cost is largely funded via financial support from ST Math itself in conjunction with private donors, Rice acknowledges the cost is “a little prohibitive” when it comes to expanding to more schools. First in Math is used in the other 27 elementary schools, and a handful of schools purchased additional products not curated by the central office to meet their needs.

Chancellor Henderson’s literacy priorities have spurred a similar approach for English Language Arts (ELA) during the current 2013–14 school year. Last
year, Rice and his team vetted ELA content from 48
different vendors, taking into account approval from
the DCPS pedagogical unit to settle on the final two for
piloting across DCPS: Lexia Reading, a reading tech-
nology company that helps struggling K–5 readers, in
17 schools, and myON Reader, an e-library that rec-
ommends books on the basis of students’ reading levels
and interests, in 27 schools.

**Funders.** Building blended classrooms is not free.
Money for these new projects comes to DCPS from a
variety of sources, including local dollars, federal grants,
and willing partners. The district budget includes a sub-
stantial investment in the technology and infrastruc-
ture necessary for blended learning. Individual schools
receive discretionary funding allocations (termed “local
funds”) to purchase new technology such as computers
or whiteboards at their discretion. In fiscal year 2014,
about $4.4 million in local funds has been budgeted
to support the integration of technology in classrooms,
which includes the cost of programs, equipment, and
professional development for teachers.\(^{11}\)

As with many districts pursuing new initiatives,
DC has benefited from a number of national and local
philanthropic partners eager to support the district’s
efforts. One of these is the DC Public Education Fund,
founded in 2008 to identify donors and attract philan-
thropy to help fulfill DCPS Capital Commitment pri-
orities. It has been remarkably successful over the past
five years in doing so.

The DC Public Education Fund facilitated the
$750,000 grant from Google that allowed DCPS to
create the central office blended-learning team and
help get the Teach to One (TTO) blended-learning
math initiative at Hart Middle School off the ground.
In 2012, it was the DC Public Education Fund, again,
that shepherded $500,000 from the Michael and Susan
Dell Foundation and an anonymous donor, a donation
that was split between Ketcham Elementary School
and Randle Highlands Elementary School to allow the
two schools to transition their core classes to a blended
station-rotation model. (We describe TTO and Randle
Highlands in more detail later in this paper.)

Another organization central to early DCPS blend-
ed-learning efforts is the CityBridge Foundation, a
DC-based family foundation started by David and
Katherine Bradley that concentrates on education
reform. Abbey Goldstein, education director of City-
Bridge’s Education Innovation Fellowship, describes
CityBridge as “more of a venture philanthropy shop
than anything else. We work really hard to research best
practices in education around the country. And then
we do whatever it takes to bring those ideas to DC.”

The foundation’s three current priorities are school
turnarounds, replicating high-performing models, and
education innovation. It is in this third area that City-
Bridge launched the first Education Innovation Fel-
lows class in 2013. In partnership with the NewSchools
Venture Fund and with a $1 million, three-year grant
from Microsoft, the fellowship recruits DCPS and DC
public charter school teachers eager to lead blended-
learning efforts and supports them with a year-long
cohort experience in an attempt to catalyze more such
activity across the city.

In the fall of 2013, CityBridge also worked with the
Next Generation Learning Challenges (NGLC) initia-
tive to establish the Breakthrough Schools: DC chal-
lenge, a $2 million grant competition for teachers and
school leaders to create new, whole-school innovation
models. The NGLC initiative has already granted $21
million for blended-learning schools across the nation,
and CityBridge hopes the effort will continue to make
the district a hub of school innovation.\(^{12}\)

**Under the Hood: Blended Learning in Southeast DC**

Discussions of district strategy, the selection of vendors,
and funding are just the beginning. What really matters
is how these pieces come together in practice. To get
a better sense of the district’s blended-learning efforts,
we tagged along with John Rice on one of his weekly
school visits, this time across the Anacostia River into
Southeast DC. DC is split into four geographic quad-
rants and eight political wards. The Anacostia River is a
geographic barrier separating almost all of Wards 7 and
8 from the rest of the city.

The river serves as a physical reminder and a symbol
of the stark divide within the nation’s capital. Capitol
Hill, the National Mall, embassy-lined Massachusetts
Avenue, and ritzy Georgetown are but a few miles from
Anacostia, but a world apart demographically. Ward 3 in Northwest DC boasts an average family income over $240,000, more than twice the district average of $118,394. Meanwhile, Ward 8, which contains two of the three schools we visited, has the district’s lowest average family income ($43,255). Ward 8 also has a 22 percent unemployment rate—more than double the district average—and almost 20 percent of the population does not have a high school diploma.13

We found this community reflected in the schools we visited. Anacostia High School’s student body is 100 percent black, and 99 percent receive free and reduced-price lunch. The school is consistently one of the lowest performers on the DC CAS, though results have ticked slightly upward since a 2009–10 restructuring by DCPS. In 2012, only 19 percent of students were considered proficient or advanced in math and 20 percent in reading, and the school’s graduation rate was 40 percent.14 Hart Middle School fares only slightly better, with 26 percent of students rated proficient or advanced in math and 30 percent in reading.15 Randle Highlands Elementary School, located just across the border in Ward 7, was slightly better still: 28 percent of students were proficient or advanced in math and 42 percent in reading.16 Both Hart and Randle Highlands were classified as “developing” schools by the state government for the purposes of the federal No Child Left Behind Act, making them middle-tier performers. Anacostia, in contrast, was deemed a “priority” school in need of intense support to address very low performance, one of 32 across the district.

While these three schools have varying degrees of student performance, they have each demonstrated a willingness to use blended-learning pilots to try to address significant student academic challenges. The effort looks wholly different in each school, from the station-rotation approach, to the adoption of the TTO model for math instruction, to fledgling experiments with online techbooks. Regardless of where the school resides on the blended-learning spectrum, each is a useful example of DCPS efforts and illustrates the potential opportunities and challenges of technology in the classroom.

Randle Highlands Elementary School: Station Rotation. In the 2012–13 school year, Randle Highlands Elementary School did not have a single computer in any of its classrooms. One year later, because of the school’s commitment to partner with the central office to adopt blended learning, each classroom has eight computers, and each school day has 90 minutes of blended math instruction and 120 minutes of blended ELA instruction. (The additional time for ELA is once again driven by DCPS literacy goals for the current school year; the extra 30 minutes is used for writing.) Students rotate through three stations during the 90-minute blended-learning blocks: up to eight students sit at computers, working on online targeted practice; a small group works on an independent activity; and the remainder huddle together for a teacher-led lesson. This model divides a large classroom into smaller chunks while giving students targeted practice on certain activities.

The impetus behind this shift is Randle Highlands’ dynamic principal, Tracy Foster. An environmental scientist by training, Foster spent her early career working for the Environmental Protection Agency in San Francisco before deciding to change tracks and take a teaching job. In 2007, as a part of the New Leaders principal fellowship program, she transitioned to administration, with spells at the DCPS Hugh Brown campus and a turnaround with Friendship Public Charter School. In 2011 she took the helm at Randle Highlands.

Foster is adamant that changing a school’s culture must take priority over any technological changes. To that end, the school worked to reduce truancy and suspensions and make academic gains, especially in ELA. The resulting improvements placed Randle Highlands into that middle-tier for both math and ELA—not a chronically underperforming school that was eligible for additional resources from DCPS, but not a top performer either. “[We] have had a very difficult time pushing the school over the 50 percent mark into higher levels of proficiency,” Foster said. The DCPS interventions were too low-level, geared toward schools with higher percentages of failing students. Randle Highlands needed something more.

Foster’s answer was blended learning. She was looking for a tool to provide more tailored instruction, and her teachers were pushing for a small-group model that would give them more focused time with their students. DCPS leadership also sees this as a major advantage of blended learning. Brian Pick explains, “There really is a powerful human capital aspect to the blended learning model [with] the teachers in the room able to work with a small group of students giving real-time active feedback.” He continues,

The other thing that excites me [about blended learning] is the teacher’s ability to increase the number of ‘at bats.’ In a traditional delivery model you teach your lesson on fractions one time and then you wait a year to teach that lesson again. And here was a model where a teacher was getting two or three at bats a day. In this model you are getting so good at teaching that lesson because you do it so often.

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Foster is adamant that changing a school’s culture must take priority over any technological changes.

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Foster first used $45,000 of her local school funds to make an initial computer purchase. Then came the Dell Foundation grant, $250,000 to use explicitly for blended learning. “We had already developed a two-year technology plan [to] try to overhaul the infrastructure here in the school,” Foster recalled. “But in [November 2012] we received this grant, and we felt it was ideal, because we were already focusing on small-group instruction.” The school already had the commitment, including teacher buy-in, and had already allocated local school funds for a computer purchase. The Dell grant was transformative, though, both in providing financial power and in giving Foster the structure to implement her vision properly.

The contours of the grant were broad and gave Randle Highlands a fair amount of flexibility in how it designed its classrooms. The school partnered with Education Elements, a for-profit education consulting company founded in 2010 that helps schools implement blended-learning models. For the first year of the program, Foster leaned heavily on the recommendations of Education Elements for content providers,
ultimately settling on four: ST Math, Lexia, MyON,
and iReady, which offers Common Core–aligned diag-
nostic and instruction for both reading and math. The contract with Education Elements also came
with intensive coaching for the school’s leadership and
teachers, as well as technical support.

Any transition like this is bound to face certain hur-
dles that are difficult, if not impossible, to prevent. The first computers Foster ordered, almost 60 machines
total, were purchased in February 2013 but did not
arrive until May because of a delay in the district’s proc-
curement office. The next batch of 100 Dell comput-
ers Randle Highlands bought came with more than 30
defective devices.

Once the computers arrived and were operational,
the school ran into problems with the DCPS main-
frame. Then, Education Elements had given each
student a unique login name and password that was
intended to work with each of the four content pro-
viders, but the Education Elements and Randle High-
lands networks failed to interface correctly. To top it
all off, one teacher resigned right after the school year
began, meaning the school had to recruit and hire a
replacement.

Foster also highlighted some unique challenges of
implementing a blended-learning model in the ele-
mentary school context, especially for kindergarteners,
who do not yet have the attention span to sit through
30 minutes of computer-based instruction each day.
The system had to be tweaked, with Foster shortening
the time to 25 minutes. Foster was not alone in find-
ing she had to make adjustments for her youngest stu-
dents. Scott Cartland, principal at Wheatley Education
Campus, a joint elementary and middle school facility,
noted that when it comes to assessing kindergarteners
online “you’re measuring as much their ability to navi-
gate a mouse and screen” as you are their cognitive abili-
ties. Foster’s and Cartland’s counterpart at Ketcham
Elementary School, Maisha Riddlesprigger, agreed.

“Another challenge for some of the younger kids is
actually the use of the mouse to manipulate some of
the programs. . . . I think it’s just their dexterity at that
early age.”

With the rotation model up and running, and with
teacher support and external funding in place, Foster
seems optimistic that this new instructional design will
push Randle Highlands into higher proficiency rates.
Her approach has been thoughtful, and the logistical
hiccups she is facing seem to be fairly inevitable prac-
tical hurdles of leading a blended-learning transition.

Hart Middle School: Teach to One Math. Our day continues at Hart Middle School—a different school, a
different blended-learning model. At Hart, almost all
students receive the entirety of their math instruction
through a blended model via a partnership with the
New York City–based nonprofit New Classrooms. For
Hart, which enrolls 517 students in grades six through
eight, this means that for three 80-minute blocks each
day, an entire grade level is in the school’s newly ren-
ovated basement learning math via New Classroom’s TTO model.

New Classrooms is the brainchild of Joel Rose, a for-
mer fifth-grade teacher who was working for the New
York City Department of Education as chief executive
for human capital in 2009 when he founded a program
called School of One. School of One is a math instruc-
tional program housed in New York City’s Department
of Education and currently operating in four middle
schools. Its chief aim is to use technology to create
highly personalized instruction for students.

Using both state assessments and daily mini-as-
sessments to gauge student learning, and taking into
account student preferences, School of One creates
a personalized daily schedule for each student. Each
schedule, or “playlist,” assigns a student to one of sev-
eral modes of instruction, called modalities, that works
best for the student on the basis of the content for that
day. For example, one student might spend part of the
day with teacher-led instruction, followed by inde-
pendent study. Another might marry the teacher-led
instruction with peer-to-peer work. A third might do
a mix of small-group work and virtual practice using
an online program. Teachers are able to track student
performance in real time, and every student is assessed
with a mini five-question quiz at the end of each day,
the results of which will build the student’s playlist for
the next day.

School of One was greeted with a great deal of fan-
fare; Time magazine heralded it as one of the best inno-
vations of 2009. In 2011, Rose left School of One
to the auspices of the New York City Department of
Education and founded New Classrooms, whose goal is to expand the School of One model, now called Teach to One, to other schools and other cities. New Classrooms is currently operating the TTO math program in 15 schools in five cities.

In 2013, researchers at Columbia University Teachers College conducted a study of students in seven TTO programs and found that these students experienced more growth than their peers nationally on the Measures of Academic Progress assessment. The study was conducted after only one year of implementation, though, and found that gains varied by demographics—black students did worse than their peers.\(^1^8\) What’s more, two of the initial three New York City schools dropped the program after the first year, citing poor student outcomes. Still, the results seem to suggest that, in the right context and with sufficient time, the program can make a difference. And DCPS Chancellor Henderson appears willing to give TTO that time, saying on the record that the new program needs three years of implementation before it can be judged a success or failure.\(^1^9\)

DCPS elected to house TTO at Hart over several other interested schools because of a strong commitment from the principal, Bill Kearney, and his teachers.\(^2^0\) Tracy MacKenzie, who works for New Classrooms out of their New York City office, agreed with this decision. “Leadership is really, really key,” she says. “We need to know both at the district level and then at the individual school level [that] we have strong leaders that really support this type of innovation and are willing to take some big, bold risks in bringing in a new program that really changes the way that instruction is delivered.” Hart, having worked aggressively to build new math labs and use technology to improve struggling student performance even before TTO was in the picture, fit the bill.

The basement of Hart, which was remodeled during the summer of 2012 to fit the distinctive TTO design, is a cavernous room with large screens that list each student’s schedule for that day. The room also contains clusters of different arrangements of computers and tables throughout. On arrival we are greeted with mild chaos; the entire seventh-grade class, nearly 200 students, was noisily transitioning to the first modality (of two) for this block.

The modalities, each of which lasts 32 minutes, include virtual instruction (for example, a high-quality video offered by an online provider such as LearnZillion), virtual reinforcement (using online practice tools such as BuzzMath or Destination Math), teacher-led instruction, peer-to-peer assignments, and “tasks” (cumulative projects that students work on for six days in a row that seek to answer real-world questions). Every math period concludes with a 10-minute, five-question assessment for each student. TTO considers a score of four or five to be passing, and a student’s result on the assessment is used by TTO’s algorithm to churn out the playlist for the next day’s class. The 80-minute operation is responsible for, with a handful of exceptions for students with more significant learning disabilities, the entirety of math instruction for Hart Middle School students.

This is year two of the TTO pilot at Hart. After the first year, the school observed minor gains in math scores on the DC CAS assessment for seventh and eighth graders, although Hart’s sixth graders experienced a significant (to the tune of 22 percentage points) drop, according to a DCPS analysis. Andrew Pratt, a senior program manager for New Classrooms in Washington, DC, attributes this to the fact that many of the sixth graders entered middle school significantly behind grade level. The TTO program, Pratt contends, helped the students catch up on pre-grade-level skills, but for many students, the gaps were so large that one year was not enough time to both catch up and master all of the necessary on-grade-level skills.

But even given mild test score increases for most students under TTO, a couple practical issues remain concerning the administration of this radical approach to math class. For one, the program is expensive. It cost roughly $1 million to implement TTO at Hart, including $600,000 in infrastructure costs from DCPS to revamp the basement and the contract with New Classrooms that covers both New Classrooms’ costs (for use of their tools, technical support, consulting, and training) and licensing fees with the digital vendors for TTO’s online content.\(^2^1\) Most of the remainder was covered by an outside grant. Such an investment might be feasible for a single school with the support of financial partners; it seems an insurmountable burden if DC wanted to expand the program to many more schools.
The shift to TTO has also dramatically changed the responsibilities of Hart’s math teachers. Teachers who run a teacher-led modality are granted only 32 minutes of instruction time, far less than they were used to in traditional classrooms. Given the fluid nature of the program, the modality that students use can vary day to day, with teachers having less of a chance to develop the same kind of relationship with individual students that comes from a year-long class assignment.

Teachers also see big differences in their lesson planning practices as they work with the daily TTO playlists. For example, they can no longer plan ahead for the entire week on a Sunday night. Originally, the TTO algorithm generated a student’s playlist for the ensuing day by 4:00 p.m. (or even later, as John Rice recalls), limiting the time teachers had to plan a lesson. When asked about this problem, MacKenzie said New Classrooms is in the process of developing the capacity for schedules to be generated throughout the school day as different cohorts of students complete their daily exit slips—an encouraging evolution that will likely be welcomed by teachers.

**Challenges with the teacher’s role present an important dilemma for any school that seeks to shift to a blended model with existing personnel.**

Still, such challenges make it clear why teachers who are used to a traditional classroom may have a difficult time transitioning to TTO. Changes to the teacher’s role present an important dilemma, not just for Hart, but for any school that seeks to shift to a blended model with existing personnel. Indeed, after the first year of TTO, Hart Middle School experienced significant turnover among a number of its math teachers. Of the seven teachers in the math lab in the 2012–13 school year, only one remains, and three left the school completely. “What all seven teachers from last year had in common,” Rice explains, “was difficulty adjusting to the radically different teaching model required by TTO . . . and all found other positions either within Hart or with other organizations.”

The high costs, coupled with some of the challenges teachers face in this different style of “classroom,” suggest that the TTO program might not be the right model for every DCPS school. And that is okay. TTO is a bold experiment for the district—one they knowingly took on, and one that has much promise in a struggling school. Part of the advantage of the DCPS strategy is that it allows the district to experiment with multiple blended models and see which ones work and in which contexts they work. The district seems willing to wait and see how that plays out at Hart.

**Anacostia High School: Discovery Education Techbooks.** When we arrived at Anacostia High School, only 5 of the 30 or so desks were occupied. Three more students trickled in during our visit, but the paltry number is reflective of a school grappling with high rates of truancy. After a few minutes of overview, the teacher instructed the students to take out class laptops and log into their “techbooks.” The techbooks are run via a DCPS partnership with Discovery Education, a rapidly growing arm of the media and communications giant based in nearby Silver Spring, Maryland. As we noted earlier, the techbooks are an entirely online portal with a host of multimedia and other features.

In theory, this model is filled with possibilities. Not only does an online platform allow for a wide variety of content, but the assessments can be taken quickly and results viewed immediately. If the students log in using unique IDs, the teacher would be able to track each student’s progress. The techbooks also allow students to work at their own pace, with the teacher free to walk around the room and give more tailored instruction.

But such capabilities are beneficial only when used to their full advantage—a responsibility that fell, in this case, on the classroom teacher. Students logged in not with unique IDs but with generic ones, negating the ability of the techbook to track their individual performance. At the same time, the teacher asked students to answer questions on a worksheet rather than taking advantage of the capability to do so online. In this classroom, in other words, the blend of teacher-led and online instruction did not lead to a new learning experience. Digital content had simply replaced the nondigital, rather than being a catalyst for restructuring the teacher’s lesson, freeing up her time to focus
on struggling students, and quickly recording student mastery. Another difficulty is that many of the students we observed lacked basic computer literacy. Several students had trouble with the simple tasks of logging in to the computer, opening the Google Chrome web browser, and finding the Discovery Education portal. One did not know how to adjust the brightness on his screen, so he had trouble reading the website.

After acknowledging these challenges, Rice reminded us that this particular pilot was just getting started. Discovery Education provides seven days of professional development for teachers using their techbooks, and this particular teacher at Anacostia High School had yet to attend her first session. We also asked Rice to ballpark how many Anacostia students would have the capability to log into Discovery Education at home to do additional work. He estimated 30 percent. That figure became evident when we noticed a student’s first instinct when trying to define an unknown word was to consult the dictionary in lieu of a quick Google search.

Given the opportunities for teacher training and as students start to gain familiarity with computer tasks, the lesson would likely have looked significantly different if we visited, say, even just a month or two later—not to mention the next school year.

**What’s Next?**

The students in the Randle Highlands classroom were, in as orderly a fashion as can be expected for a group of second graders, progressing through the day’s ELA station rotations. Eight huddled around the teacher as she instructed them on the nuances of verb conjugation. Another cluster sat at tables practicing independently. Over on the computers, eight more students were using an ELA program that read a word aloud and prompted them to type it in correctly. As we stood across the room, we saw seven students sitting quietly with headphones doing their work, while out of the eighth computer blared the program’s instructions. The student there did not have headphones and, given that the program is impossible to use without audio, had to use his computer speakers. This was rather distracting for another student at a nearby desk who had been assigned individual reading.

Once more we see the promise—tailored instruction—and one of the challenges—having the proper equipment—of blended learning. Indeed, this hurdle remains one of the most pervasive for DCPS. Scott Cartland, principal at Wheatley Education Campus, lamented that “relying on so much technology does bring a different set of worries. Do you have enough access points? Is everything being routed in an efficient way? Do you have the hardware? Do you have the right software? Do you have the right logins? What happens when things crash? It just provides a whole other level of logistics and costs and things to figure out.”

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*No matter how good the tools are, if students cannot use them, even the most promising blended-learning efforts will be derailed.*

Teachers who are pursuing classroom-level changes also experience difficulties acquiring the technology they need. One teacher we spoke with who is actively trying to shift her classroom to a blended model said procurement was by far the biggest obstacle she faced. To implement a station-rotation program in her classroom of 24 students, she needed eight computers. After haggling with the district, she finally received the eight computers she needed. Three worked. She improvised, buying four iPads with $2,500 in discretionary funds and combined that with her boyfriend’s old laptop to get the eight machines she needed. This piecemeal approach is so cumbersome that only the most persistent teachers will see it through. The central office has likewise taken note: Pick explains, “The hardware and the actual mechanics can get in the way too easily, and teachers should not have to deal with headphones and power strips and all that stuff we can easily forget about.”

Digital-learning conversations often have the feel of something new and different and edgy. And yet the logistical elements required for a smooth transition—handling computer shipments, correcting technical glitches, managing schedule changes, conducting teacher training, and keeping enough headphones in stock, for example—are not particularly, well, sexy.
John Rice’s team, in addition to helping principals and teachers navigate these challenges every day, is pushing to head them off with a long-term vision for blended learning in DC, centered on two main goals.

First, one of the main concerns about launching blended-learning programs for the first time, as we observed at Anacostia High School, is ensuring that students have the capability to do what is asked of them. No matter how good the tools are, if students cannot use them, even the most promising blended-learning efforts will be derailed. To mitigate this problem, DCPS hopes to build “feeder patterns”—implementing blended-learning models at each school in an elementary–middle–high school chain so students can start learning digital skills at a young age and be prepared for more robust blended-learning elements in later years.

Second, Rice hopes to move more schools toward a station-rotation configuration like that at Randle Highlands and Ketcham Elementary Schools. This is not to limit other blended-learning approaches, such as Teach to One or the Discovery Education techbooks. But DCPS has learned from early efforts that the rotational model is well suited to blend teacher-driven and computer-based instruction in a fairly nonintrusive way for students.

As Rice explains, “The small-group teacher-led station, where a teacher is working with a homogenous group on very specific skills that has been informed by data from the digital content and other measures, is the most impactful part of a student’s school day, and expanding these stations to additional elementary schools . . . is important to making sure students get strong, data-driven, targeted instruction from a teacher.”

As blended learning spreads across the district and the central office grows to keep pace, DCPS central office staff have managed to maintain a careful balance between encouraging schools to experiment with different blended models while simultaneously consolidating what they learn into a coherent district strategy. To date, the district has largely only partnered with schools who are willing participants in the blended-learning process; the district sees its primary role as supporting these schools rather than pushing a uniform model.

Will this change over time? If, for example, a new middle school adopts the Teach to One program and finds that the sixth graders who enter it lack the requisite computer skills to function in that environment, will the district lean on the local elementary school to ramp up its blended efforts? It is an open question the central office will have to wrestle with as blended learning continues to grow in the district.

So, what does the future hold for blended learning in DC? If the past is prologue, expect to see the gradual expansion of high-quality blended learning across the nation’s capital. DC is a charter-rich city, and the charter school space is a particularly ripe environment for new models. Ingenuity Prep, a blended-learning charter school that uses a station-rotation model along with an extended-day and extended-year schedule, opened in 2013. The school now serves only preschool and kindergarten, but it plans to add a grade each year through grade 12. Rocketship Education is also slated to open a school in the district in the fall of 2015. More schools like this, in addition to the efforts of the blended-learning team at DCPS, might fuel an increasing appetite for innovative learning environments elsewhere in the district.

The future looks bright. A successful blended environment involves an appetite for trying new things, strong district and school leadership, teacher buy-in, effective training, and vibrant community partners. It is a recipe that, despite the hard work, the district is willing to take on because the results appear to be worthwhile. As Ketcham Elementary School’s Maisha Riddlesprigger puts it, despite “some growing pains,” her teachers are supporting the school’s forays into the blended world because it is “enhancing their classrooms in a way that they probably didn’t imagine.”

Notes

1. According to the Council of the Great City Schools, about 15 percent of students are educated in one of the 100 largest school districts; see www.cgcs.org/Page/75.

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7. Unless otherwise noted, all quotations come from interviews conducted by the authors between September 2013 and January 2014.


9. “DCPS Opens with Students Ready to Learn and Build on Previous Year Success.”


20. Ibid.


22. We opted not to emphasize charter schools in this paper, focusing instead on traditional district schools in an effort to make the lessons learned relevant to as many other districts as possible.