Blended Personalized Learning Compilation

The following documents provide an overview of the Blended Personalized Learning work funded by the Rogers Family Foundation between 2012 and 2016. Note the due to the age of these documents, some of the embedded links may no longer work.

Oakland Blended Learning Case Study: Part One - Blended Learning in Practice: Four Districts School Journeys
Oakland Blended Learning Case Study: Part Two
Oakland Blended Learning Case Study: Part Three
Oakland Blended Learning Case Study: Part Four (final)
Blended Learning Schools Two-pagers
Evaluation of the First Year of the Oakland Blended Learning Pilot by SRI Education
**Blended Learning in Practice: Four District School Journeys**

*Written in Oct 2012 by Carrie McPherson Douglass and Greg Klein
Part Two, written in January 2013, can be found [here](#)*

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### Introduction

This case study describes 10 months of planning, design and implementation of a blended learning pilot in four traditional district schools in Oakland, CA. This reflection is complemented by our [Oakland Blended Learning Guide](#), which describes the overall pilot budget, size, demographics and timeline as well as the specific classroom designs, schedules and online content chosen by each of the four schools. We have learned a lot over the past 10 months and hope that our experience can help you to ask the right questions, consider tradeoffs, and learn from our mistakes. Visit [www.rogersfoundation.org](http://www.rogersfoundation.org) for a [resource list](#).

We are incredibly hopeful about the progress and promise of personalized blended learning and confident that our teachers and students are already benefiting from this pilot and that the short and long term results will be positive. That being said, we are early in this work and it is still complex and messy and frustrating at times. We hope that this candid case study will inspire you to pursue blended learning and also highlight potential obstacles that you should anticipate and plan for.

### 1. Background

Despite being the most improved school district in California for seven consecutive years, **Oakland Unified School District** faces a persistent achievement gap and teacher turnover that is twice the national average. Superintendent Tony Smith has been a strong leader since 2009, bringing consistency and financial stability to a system ravaged by years of state takeover and a revolving door
of superintendents. The Oakland Unified Strategic Plan - Community Schools, Thriving Students - calls for a 21st Century education for Oakland students but lacks details on how to do so. The City of Oakland has approximately 66,000 school aged children, but only 46,000 attend public schools, presenting an important opportunity to attract those families back into the public school system by offering the best teaching and technology available in the 21st Century. Of those students attending public schools in Oakland, nearly 23% attend public charter schools. In 2011, OUSD had 45% proficiency in ELA, 46% proficiency in Math and a graduation rate of 59%.

The Rogers Family Foundation (RFF) has been supporting education in Oakland for the past decade. RFF has worked closely with the district on reforms in the national spotlight including the small autonomous schools created during the Oakland Small Schools Movement. The Foundation supports both district and charter schools, with a focus on supporting promising schools in underserved neighborhoods to surpass the 800 API California benchmark for quality. RFF also supports local nonprofits & community organizations, often acting as a “backbone” organization to help align & catalyze organizations working towards a common goal, with a focus on school readiness & literacy, education leadership, community reform voice and innovation.

Over the 2009 and 2010 school years, RFF received an increasing number of grant applications from schools wanting to use technology to improve student outcomes. Upon receiving final grant reports, we noticed an interesting trend - technology initiatives had low rates of implementation success compared to other grants. Even high performing schools seemed to have difficulty successfully rolling-out technology initiatives.

In Fall 2011, Carrie McPherson Douglass joined the Rogers Family Foundation after spending 5 years working closely with schools and teachers to implement innovative solutions for teacher training, development, recognition and evaluation. Mrs. Douglass was convinced that with so much focus on accountability, evaluation and reforms outside of the classroom, the reform community wasn’t focusing enough resources on actually helping teachers do their incredibly complex job more effectively and efficiently. Good teachers know that they should differentiate, use data to drive instruction, work with small groups and give individual feedback, but those strategies are nearly impossible when faced with a classroom of 30 students, many below grade level, with different needs, and without the right tools. We cannot expect teachers to be super-humans.

Technology has helped countless other industries become more efficient and effective, and we believe it can do the same for teachers.

**We also believe strongly that early blended learning investment needs to include districts.** Most of the current investment is targeted at charter schools with the belief that innovation will thrive without the constraints that large urban school districts face. We believe that innovation is important... and that this is an equity issue. The digital divide is real and without significant investment in the tens of thousands of students in urban districts, the achievement gap will start widening again. Every student deserves access to the very best teaching and technology available.

There are many incredible principals and teachers working in district schools who can thrive when given the opportunity and support to innovate. In addition, districts are huge and will drive the online
content market whether we like it or not. We must therefore create high quality proof points in traditional district settings to help drive high quality implementation of blended learning where the majority of students and teachers are. The combination of innovation in high-performing charter schools along with high quality proof points and implementation at scale in districts, will transform public education.

^The opinions stated in this case study are not necessarily representative of the Rogers Family Foundation or any of our pilot partners.
2. Building a Personalized Blended Learning Model

1. Choosing pilot schools

In Fall 2011, several Oakland principals and teacher leadership teams began approaching the Foundation to ask for support with blended learning. Believing that technology was finally at a place to dramatically improve education, RFF began exploring the potential with interested principals. We invited around 40 school leaders to join an informational session on blended learning. Following the meeting, 12 schools indicated strong interest and we visited each of their campuses.

We ultimately selected 4 pilot schools based on the following characteristics:

- Strong, stable leadership
- Collaborative professional learning culture among teachers
- Support from the Regional Executive Officer (principal supervisor)
- Good enough instructional foundation and consistent practices across classrooms
- Good enough classroom management across classrooms
- Data-driven culture (although available data was limited)
- Innovative vision for technology (not necessarily already using it) by the principal and at least one teacher leader
- Close proximity to one another to support collaboration
- Diversity of grade levels
- High percentages of underserved populations
- Upward trajectory of student achievement but haven’t yet reached the “800 API” bar established by California for all schools

We met with the principal and teacher leaders at the four schools to discuss the commitment and signed a two-way MOU with each school to solidify the deep expectations from both the schools and Foundation. The MOU encouraged important conversations before starting & was critical for success.

Although this is intentionally a grassroots initiative driven by schools*, we knew that District support would be critical, and the Foundation began meeting with everyone who would need to be involved, including Facilities and Grounds, Informational Technology (IT), Instructional Technology, Leadership, Curriculum & Instruction (LCI), and Research, Assessment and Data (RAD). It quickly became apparent that managing everything from an external vantage point would be difficult, if not impossible. Fortunately, OUSD identified the same issue and committed to the success of this project by assigning an internal Project Manager, Tracey Logan. With Mrs. Douglass as the external project manager and Ms. Logan working internally, the pilot became a reality.

*In Oakland, top-down initiatives have rarely resulted in sustained systemic change, and are often met with immediate skepticism and defense. The Small Schools Movement is an example of a successful grassroots effort driven by Oakland Community Organizations (OCO) that has spread and withstood the test of time. We believe that blended learning will only be, and should be, driven by teachers who see it as a true support to their profession and a strategy that helps them feel and be more effective. If the superintendent had dictated a move to blended learning, it would likely have been derailed before it even began, and true innovation in the pilot schools would have been stifled.
2. Design work

Blended learning is not about computers or software. Technology is an enabler, not the answer. We didn’t want a shallow implementation of putting computers in classrooms and moving some paper-based work online. **We knew this would require a deep commitment to changing teacher & student practice and behaviors, and that the design process would be a critical foundation for future implementation.** We wanted to allow space for teachers and leaders to throw assumptions out the window and redesign their schools and classrooms to better meet the needs of each student on a path to success in college and career.

Even with project managers focused on technology infrastructure, funding, and relationship management, we felt we lacked necessary expertise in school design, online content, data integration and blended learning implementation. We made the decision to contract with two partners. Two schools chose to work with Education Elements and two schools chose to work with Junyo*.

The process started with school visits to Aspire ERES, Rocketship, and Downtown College Prep in the Bay Area, as well as webinars with KIPP Empower and Alliance BLAST in LA. For three months in the Spring, pilot teachers met 2-3 times per week with Ed Elements and Junyo to work on scheduling, staffing, classroom design, and content selection.

The design period culminated with consultancies, where each school presented their designs to the other pilot schools, district leaders, foundation staff, and researchers who acted as critical friends to improve their design. Each school design, along with the online content they selected, schedules and classroom designs can be found in the OUSD Blended Learning Pilot Guide.

*Junyo has since changed directions and is no longer working directly with blended learning schools. *(EdSurge article)*

3. Implementation

Implementation began over the summer. **We knew it would be a lot of work, but the amount of time and resources spent on technology infrastructure far exceeded our expectations.** Below are each of the areas we had to address and the obstacles we encountered along the way. At every step, each person involved did everything in their power to overcome obstacles as quickly as possible, but despite our best efforts we were still not ready to go on the first day of school. Let us reiterate - we had a team from RFF, teams from Ed Elements and Junyo, teams from OUSD, and school teams all working on this for 3 months, and we still weren’t 100% ready for the first day of school - do not underestimate this aspect of the work!

- **Electricity**

Because our pilot schools were not designed with technology in mind, electricity and location of outlets limited classroom designs and the number of computers in each classroom. Teachers would draw their ideal classroom rotation design, and then we’d face the reality of where outlets were located and how much load each could handle. We had to consider both how to charge computers overnight, and how to charge computers during use throughout the day.
• **Bandwidth**

Many low-income urban neighborhoods do not have good internet options. We worked with AT&T to increase the elementary schools to 50 mbps and the middle schools to 100 mbps. We will be monitoring the bandwidth usage at each school site to determine if our base standards for blended learning schools need to go up or down.

Ideally, you should get the maximum bandwidth required for each content provider and multiply that by the number of students who will be using the program at any given time, in addition to regular school bandwidth usage, in order to determine the minimum bandwidth needed for your site.

• **Wireless**

Initially, due to budget constraints, we planned to use as few WAPs as possible. After talking with other blended schools who named bandwidth and wireless connectivity as major obstacles, we decided to invest upfront in strong wireless deployment in order to avoid downtime and frustration during the school year. We deployed autonomous Wireless Access Points (WAPs) at a 15:1 student:WAP ratio for all pilot classrooms. Currently we are experimenting with reconfiguring our autonomous WAPs to function as lightweight controllers in order to more efficiently and maximally balance the load as needed.

• **Furniture**

We did not budget enough for furniture. Due to limited space, almost every classroom needed different furniture in order to make a blended rotation work. For example, in the 4th grade classrooms at Korematsu, there was not enough room for 32 individual desks AND desks for computers. And instructionally, they didn’t need space for whole group instruction any longer. So they removed the individual student desks and replaced them with group tables for instruction with the teacher and small group work, and long skinny tables in the back for the computers. Students now have individual cubbies where they keep their notebooks and school supplies (rather than in their desk). When it is time to rotate, students go to their cubbies to put away paper and pens, go to a wall to get their individual set of headphones, and go to a computer.

Two schools made use of counters above cabinets, but needed tall stools in order to turn the counters into “desks” for computers. The stools are not particularly comfortable and we are looking for a better solution in the future.
- **IT Service**

The OUSD IT department is not setup to provide instructional technology support to schools. The IT department has only 6 support staff for 90+ schools and district buildings. Tickets often go unfulfilled for months. IT does not coordinate with LCI (Learning, Curriculum & Instruction), so when individual schools request support they don’t know how to ask for what they need; IT does the best it can but doesn’t always know how to provide the best solution for the instructional problem.

For example, Madison Middle received a grant to become a 1:1 laptop middle school two years ago. The Madison staff didn’t have the knowledge to tell the IT department how to “image” the computers for their intended use. The computers never worked well, and the Madison staff assumed it was bad hardware, so most of the laptops sat gathering dust for several years. When Madison became a Blended Learning Pilot School we purchased all new computers, thinking that the old computers were worthless. After hiring our Director of Blended Learning, Greg Klein, he figured out that the old laptops had simply been configured and imaged incorrectly, and not “locked-down” or “frozen”, making them unusable. After reimaging and locking-down the laptops, we are now re-deploying them to new classrooms and won’t need to purchase additional computers when Madison goes blended school-wide next year.

The IT team works hard and made every effort to meet the needs of the pilots schools. However, in order for OUSD to deploy 21st century technology across all schools, they will need to completely reconfigure and retrain staff to support the instructional needs of schools.

Madison Middle, as part of an internship program, has 7th grade students providing technical support in their 6th grade classrooms.

- **Data integration**

Taslim Shaikh, also a project manager in OUSD, led the data integration work for OUSD with Ed Elements and Junyo. After district legal agreements were put in place to share student information, and the data was accurately inputed by the school sites, Taslim and Ed Elements went back and forth until a workable data stream was established. Data Integration faced some challenges, one of which was that Ed Elements needed master schedule data before it was prepared by the school sites. This information is critical for Ed Elements to provision online content accounts for teachers and students, sync them to their HLMS and keep them up to date with roster changes throughout the year. However, due to the complexity of secondary scheduling and the delay from the state in providing spring test scores, Madison Middle was not ready with their Master Schedule until right before the start of school. District
and school leaders should re-evaluate their regular planning timeline for the year they plan to go blended. Class schedules, rosters, SIS platforms, databases, etc. need to be updated and finalized months ahead (June) to provide enough lead time for teachers to prepare their curriculum and get familiar with their digital content before school starts.

There are many places in our pilot where data does not yet integrate, especially at the schools that were originally working with Junyo. One example is that a student may need accounts for 5 different online content vendors and in this case, we’ve worked to ensure that the usernames and passwords are the same for the student. So while they may have to type it in separately to log-in to each provider, at least we’re limiting for them how many log-in credentials they need to memorize. Since losing Junyo as a partner, we are rescanning the market and considering Illuminate/Activate (used by Summit Public Schools) and Schoolzilla (used by Aspire Public Schools) as well as free solutions such as Clever and Learnsprout. In the meantime, our team created a Google Doc to act as a launchpad for students.

- **Hardware**

Hardware is constantly evolving and there are many tradeoffs and considerations when selecting hardware. Laptops provide more flexibility, but have a shorter life and tend to be stolen more often. Desktops are large and inflexible, but last longer, generally have more memory and RAM, you don’t have to worry about battery life, and they get stolen less. Tablets are somewhat cheaper but don’t support a lot of the online content currently available, plus they don’t have keyboards which make substantial typing difficult. Chromebooks are fast and cheap, but may not officially support all online content.

We ended up deploying 11” Macbook Airs at Korematsu. They are sleek and fast. The mousepads are large and easy for kids to use. The teachers have struggled a bit because they were used to PCs. We are concerned about theft, but haven’t experience it yet. The laptops stay out on desks, plugged in during use as needed. Ed Elements projects that Apple computers will have a lower total cost of ownership.

At Madison Middle we went with Lenovo Thinkpads. In some classrooms, the laptops are put away in charging carts each night, and in other rooms, they charge during use during the day.

EnCompass and Elmhurst chose ultra-thin ACI desktops, with 17” flat screen monitors. Some teachers are mounting the screens to the wall to save counter space. These are both wired and wireless desktops, providing some flexibility in terms of getting them online. EnCompass also chose a blended learning model requiring a computer lab. In order to make that work in the budget, we decided to use refurbished computers from OTX West (www.otxwest.org). These are Windows 7 Pro, 2 GB RAM Dell desktops, with flat panel monitors, imaged correctly and installed for under $250 each. With a strong relationship that covers all the details, refurbished computers can be a great solution for schools going blended.

**On average, we spent $238 per pilot student on hardware.** (Our classroom rotation models are not 1:1 and therefore cheaper.)
● **Software**

The online content sector is changing even faster than the hardware sector. Overall, the quality of online content is still very poor. With help from Ed Elements, we selected content using a rubric that considers scope & sequence, standards alignment, pedagogical approach, data reporting, computer requirements, user training, assessments, provisioning and more.

We ended up under-budget on content, **spending an average of $75/student**. Some of the overarching issues with online content:

- Almost all content claims to be “standards aligned” but that could mean they simply drew a line between each of their activities/problem sets to the most applicable standard.
- Each content provider provides different data in a different format, making it almost impossible to compare or draw conclusions. Some content providers will give you the raw data, but not necessarily in the format you’d like. Other content providers won’t give you the data at all, and you have to rely on their canned reports.
- Online content is not yet aligned to offline content. Adaptability and assignability are still in tension with each other. In other words, a teacher has to choose between giving up control so that they software can personalize for each student, or take control in order to align the content with what they are teaching, and lose the ability to adapt to each student... which is the point of using online content.
- Many content providers simply have poor user interface or poor content.
- Content is expensive, has to be purchased as an annual license (so you can't “pilot” it), and sometimes has minimums for number of students (also making it difficult to pilot).
- Some content providers are playing nice with platforms like Ed Elements and Clever, and many aren’t. It is a slow, grueling process for a company like Ed Elements to form partnerships with every content provider. We are thankful they are doing it!

Our favorites so far are ST Math (although we struggled to get them to lower their minimums so we could try it in a few pilot classrooms), Achieve3000, and teachers report really enjoying Adaptive Curriculum 8th grade Science and McGraw-Hill ConnectEd 7th grade Social Studies.

4. **Roles**

- **Partner Funders** - We are very grateful for the support of three partner funders in this work. Gisele Huff has been invaluable. Derek Jernstedt with the Quest Foundation provided funding for hardware at EnCompass and Korematsu. Scott Benson with The Gates Foundation has generously provided funding for the SRI Evaluation as well as his expertise.

- **Carrie Douglass, Sr. Director, RFF** - Part of the reason this pilot is successful is because of sheer **will** on Carrie’s part to not give up, including 50+ meetings at the District and with possible partners to put this together and keep it moving toward a successful first day of school. Blended learning at its best is very complex and we can't imagine a single school principal putting all of the pieces together alongside the work of running a school. The sector is currently fragmented, confusing and expensive and has a long way to go to efficiently and effectively support schools.
• **Greg Klein, Director of Blended Learning, RFF** - As a former OUSD teacher and principal, Greg brings critical relationships and instructional expertise to the team, along with blended learning experience from his time at Downtown College Prep. Greg holds the instructional outcomes for this pilot and splits his time between individual and group teacher coaching, principal thought-partnership, hardware & software set-up and support and overall pilot strategy.

• **Tracey Logan, Project Manager, OUSD** - This pilot would not have come to fruition without Tracey Logan’s enthusiasm, project management skills and strong relationships across the district. Tracey organized weekly meetings, made sure the right people were at the table, and often did the work herself if everyone else was too busy.

• **Kimi Kean, Regional Executive Officer, OUSD** - As the supervisor of our four pilot principals, Kimi has provided critical leadership, protection, and alignment for our pilot schools. She advocates on behalf of our pilot schools, pushes our pilot principals to focus and align this work with the other strategies at their school, and will evaluate pilot principals partially on their implementation of this pilot.

• **OUSD Steering Committee** - The Steering Committee includes leadership from LCI, RAD, IT, and instructional technology. We met twice-monthly throughout the planning and implementation stage, and will meet quarterly for the first year. The Steering Committee has taken responsibility for the overall success of the pilot and ensuring that it aligns with and informs other District work. A special thank you to Gee Kin Chou, Tim White, Jacqueline Minor, Jean Wing, Kyla Johnson, Rattana Yeang, Kevin Smith, Taslim Shaikh, Sarah Breed, Phil Tucher, Caleb Cheung, Ann Kruze, Leah Jensen & Oakland School Board Vice President Jumoke Hinton-Hodge.

• **Education Elements** - As a funder, we can’t imagine having done this without Ed Element’s consulting and design support. Ed Elements took the lead with the principals and pilot teachers throughout the spring to design their blended learning models and select content. They led the change to blended learning with a combination of strategic advisory and implementation services for their pilot schools, including:
  
  • *Enabling principals and teacher leaders to articulate their vision for blended learning through education and collaboration activities around model design.*
  
  • *Providing the implementation roadmap, project plans, and weekly check-ins to keep school leaders and central office IT staff on track with critical implementation milestones.*
  
  • *Building teacher buy-in and competencies by engaging staff in digital content selection and designing PD to help teachers focus on the critical success factors for a blended classroom.*

Ed Elements worked over the summer to integrate with as many content providers as possible, but at this point they integrate with about 50% of content providers. *Access to a variety of content is key to the blended learning solution and different schools have preferred content providers. Wider access to content helps schools achieve results and broader distribution helps content providers achieve goals. To create a successful ecosystem, more content providers need to consider partnering with organizations like Education Elements.*

Ed Elements did some up-front work negotiating with content providers, but they did not assist with hardware or software procurement or set-up. They led the week of summer training and will provide four PD sessions throughout the fall. They are available to troubleshoot and have provided exceptional service. They are in constant contact with Greg Klein.

• **Alvo Institute** - The Alvo Institute is an Oakland-based consulting firm focused on blended
design and teacher professional development. Their teacher support is blended, with most of the content online and personalized for each teacher, supplemented by some in-person training and support. The Alvo Institute is working with EnCompass and Elmhurst.

- **SRI International** - SRI is completing a 3-year evaluation of the pilot. More details in the evaluation section below.
- **OTX-West** - The Oakland Technology Exchange West is a unique Oakland institution that provides refurbished computers to schools and directly to families in underserved neighborhoods. The Executive Director, Bruce Bigelow, has been a critical partner in keeping costs down for computer labs. We are also discussing the possibility of Bruce providing low-cost computers to all pilot families so that students have access to computers at school and home.
- **Oakland Schools Foundation** - As the fiscal agent for this grant, all funding flows through OSF directly to vendors, bypassing the slow & complex purchasing process at OUSD. OSF also pays teacher stipends directly to pilot teachers as independent contractors. This setup has allowed us speed and flexibility when dealing with many vendors, partners and staff.

5. **Professional development & coaching**

We have a few common goals for professional development across the four schools, namely that teachers learn how to:

- use data to form meaningful groups of students for targeted lessons
- use data to customize lessons delivered to students
- explore and clarify the procedures, routines and expectations needed in a blended rotational classroom
- master their particular online content and hardware

At our two Ed Elements schools, teachers had a week of PD before the start of school to get a head start on all of this. Throughout the year, Ed Elements will rejoin teachers 4 times to lead ‘data dives’. Between those sessions, Greg meets with each schools’ teachers (separately) twice a month after school, for 90 minutes. We are constantly in our teachers’ classrooms, asking them what is working well and where they are stuck. We use this information to deliver what we hope are meaningful “on demand” PD sessions.

At our other schools, The Alvo Institute is our main PD support. Teachers were all surveyed and had a chance to self-report their strengths and areas of growth covering a whole host of blended skills and prerequisite skills. Teachers were then given back a report that showed them where they were on Alvo’s rubric of blended skills, and were matched with online resources available 24 hours a day, 7 days a week. Alvo teachers have access to an online community of blended practitioners where they can explore, share ideas, ask question and get help.

Training from online content vendors varies widely and includes in person, live webinar, recorded webinar, online tutorial, video, demo sites, FAQs, etc. We try to minimize time spent on vendor-created training whenever possible, as it tends to take much longer than is necessary & is mediocre in quality.

Greg will complete monthly walkthroughs with each principal, sometimes joined by Kimi, Carrie or
Tracey, to discuss the instructional progress in each classroom and identify areas of focus for each teacher and grade/subject team.

3. Where are we, one month into school?

1. Classrooms

We visited four classrooms at Madison Middle school and two classrooms at Korematsu 4 weeks into the pilot. We saw:

- **In all classrooms routines are in place that make rotations almost seamless.** In one 7th grade class we were there before the bell rang and as students trickled in they either went directly to a computer or to a desk near the teacher, clearly aware of where they were supposed to be, and logging into Khan Academy without prompting. In a 4th grade class, students quickly logged out and hung up their headphones, while the other half of the class packed up their pens and paper into their cubbies and moved to the computers.

- **Classroom rotations have immediately given teachers the previously rare opportunity to work with a class half the size of normal classes all day.** With 15 students engaged on computers, teachers have the luxury of engaging in group conversations and instruction that looks and feels dramatically different with only 15 kids. Plus, teachers don’t have to create the online content (as opposed to most teacher-created workstations) and will get data back from the computer work (although the data isn’t great at this point).

- **The hardware works.** The upfront investment we made in bandwidth, wireless, imaging and locking-down the computers appears to be working beautifully.

- **Offline and online curriculum is not aligned.** Currently, students are completing online content that is relevant or complementary to the concepts being taught by the teacher, but is not completely aligned; the work being completed online doesn’t necessarily build on instruction with the teacher, and vice versa. The middle school students are using College Board’s Springboard curriculum, which surprisingly is still workbook based. In one class we watched students take a Springboard “embedded assessment” in a paper workbook, which the teacher will have to manually grade and analyze. Hopefully Springboard will put their interim assessments online soon.

- **The promise of more and better data isn’t real yet - the technology just isn’t where it needs to be.** Teachers are struggling to access and use disparate data from different online content providers, especially those that don’t yet integrate with the Ed Elements HLMS. We watched students using Khan Academy and TCI History Alive, neither of which is integrated with the HLMS yet. Therefore, the teacher is still manually grouping students and pulling data from different, disparate places. This is a significant obstacle to maximizing blended learning. Most teachers said they were still grouping students heterogeneously at this point.
On the flip side, we’re not sure that using data from many different online content providers is actually the answer to improving data-driven instruction for teachers. Perhaps the primary purpose of online content data is to drive the adaptive differentiation for students, and teachers need to use daily/weekly assessments from a 3rd party (e.g. NWEA MAP questions) to drive grouping and instructional decisions.

- **Teachers are asking the right questions.** Once the technology works and students have access to online content, a world of possibilities seem to open up to the teacher. Teachers are already making suggestions that move towards mastery-based course completion, multi-grade student configurations and better uses of teacher time. We can’t wait to see what these schools look like after teachers have experimented for a year!

2. **Schools**

**Korematsum Discovery Academy** (KDA) was opened seven years ago as a response by the Oakland Unified School District to the required closure of another school which had been persistently failing to adequately educate its students. In the first year using blended learning at KDA, the school experienced the largest API gain for any elementary school in Alameda County, successfully exited federal Program Improvement status, and was one of only 35 schools in California nominated for the U.S. Department of Education’s Blue Ribbon status. This year in our pilot, KDA is partnering with Ed Elements. Our pilot here includes the two 4th grade teachers. KDA has a stable, effective principal in Charles Wilson who has written his own white paper on blended learning (http://www.scilearn.com/resources/whitepapers/a-principals-guide-to-blended-learning/).

**James Madison Middle School** is a 6-8 middle school currently with 350 students and growing to be a K-12. Our pilot here focuses on 7 classrooms and teachers, but touches nearly all the students in one core subject or another: mathematics across the grades, 7th & 8th grade social studies and 8th grade science. Dr. Lucinda Taylor leads Madison as principal and since coming to the school she has grown a strong school culture of respect and academic rigor. We are excited to have the opportunity to be involved in designing the high school as a blended learning school before it opens next year.

**EnCompass Academy** opened in the 2004 and was designed by East Oakland parents and public school educators. Originally located in portable classrooms on the overcrowded campus of Webster Academy, the school moved to a brand-new campus located on 81st Avenue in 2005. With rolling lawns and pathways lined with native plants, beautiful play structures, garden beds, an outdoor amphitheatre, a state-of-the-art multipurpose room, and the largest branch of the Oakland Public library coming in 2010, the campus is truly an oasis for children to learn and develop. Our pilot work here now includes the entire school, K-5 and the SDC class. In the upper grades, students visit a Learning Lab and have in-class rotations with teachers. K-3 students experience in-class rotations using both math and reading online content.

**Elmhurst Community Prep** (ECP) opened in 2006 and is a 6-8 small middle school by design. ECP is grounded in four theories of action—**high expectations, collaboration, positive school culture, family involvement.** The ECP Family works to ensure all students promote to high school on a positive life trajectory and prepared for rigorous A-G coursework. Our pilot includes 6th and 7th grade math and the school’s SDC class. Additionally, ECP partners with Citizen Schools to provide a ‘second shift’ of
teachers for the extended day program. Students continue their work with online content across both the regular and extended school day.

The four pilot schools serve students with the following demographics: 93% free or reduced lunch, 61% English language learners, 64% Hispanic, 31% African American and 5% other.

3. **District**

Alongside our work with schools has been a parallel path of working with the District to create a vision for personalized learning and a 21st Century education for all students.

We engaged the Deputy Superintendent of Leadership, Curriculum and Instruction (LCI) in the development of the SRI Evaluation, which helped move the LCI team from thinking about blended learning as “computers in classrooms” to a strategy to personalize instruction and change teacher & student practice and behaviors.

We brought a team of 10 OUSD leaders representing every department down to San Diego to learn about their district-wide implementation of 1:1 computers and internet access for every student at school and home. That day together talking and learning about blended learning was a game-changer and gave us the momentum we needed to revise the Bond Measure going on the ballot in November to include technology infrastructure - a critical component to making blended learning possible at scale. A school board member also joined us on the San Diego visit and was instrumental in getting the Bond language revised and passed.

Since then, a cross-department team was formed to work on the Facilities Master Plan (previously the education side of the house wasn’t involved). The IT department is working closely with the LCI (Learning Curriculum and Instruction) Dept to develop a vision that supports the integration of technology in instruction in classrooms rather than simply computers in buildings. The Facilities Master Plan has traditionally focused on buildings (e.g. roofs and football fields) not classrooms or instruction. We are trying to help focus resources on instruction in classrooms rather than just buildings.

Instructionally, OUSD is several steps away from being able to support effective teaching, with or without blended learning. OUSD does not currently have a “framework for effective teaching” that is used consistently and aligned across planning, professional development and evaluation. Because there is not a common language used to define what effective teaching looks like, it makes it difficult to evaluate the impact of blended learning on effective teaching. Since OUSD lacks a framework, SRI is creating one to use for purposes of evaluating the blended learning pilots.

There is still a long way to go until the day when every student in Oakland has access to the best technology and teaching available. But the conversation has shifted more quickly than we hoped for. We believe that blended learning could help draw middle and upper income students back into the system. We believe that it can improve outcomes for students at the bottom and the top and everyone inbetween. There is a sense of urgency, and a desire to slow down and figure out what works first. Either way, we will keep pushing so that the digital divide doesn’t erase the gains Oakland has made over the past 7 years.
4. Evaluation

The blended learning space lacks research showing that blended learning consistently and substantially increases student achievement when implemented with fidelity, while also increasing teacher satisfaction, efficacy and retention. We wanted to add to the research base and also provide feedback to OUSD for continuous improvement with these pilots and future implementation. This is an evaluation of the pilot as a whole, not of individual classrooms or schools.

We engaged with SRI International because they have the most experience with blended learning research and we wanted to save time & money and also have some consistency across studies to make them more complementary. We decided to engage SRI early in the process which turned out to be really helpful. Throughout the design process they continually pushed RFF and the schools to clarify our theory of change and specify exactly what levers we were changing and what outcomes we expected. There are many possible points of change with blended learning and we decided that we were more interested in observing and measuring changes in teacher & student practice and behavior than the efficacy of online content, for example.

For the first year of the pilot, SRI will use teacher surveys, deep-dive observations in select classrooms, student focus groups and interviews across stakeholders to describe the implementation and changes in teacher & student practice and behavior. In Year 2, SRI will continue the qualitative evaluation and add quantitative analysis of student outcomes.

![Exhibit 1. Logic Model for the OUSD Blended Learning Pilot](image-url)
5. Finances

In Year 1, we are investing approximately $971 per student for 1000 pilot students in 38 classrooms.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
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Cost Savings

Cost savings is not our priority for the first year of this pilot. California schools are operating on extremely tight budgets with no extra fat. Our hope is that these schools will have substantially better student achievement with a small, mostly one-time investment of under $1000 per student. Over the long run, if blended learning results in cost savings it would be great, but our first focus needs to be on increasing quality, closing the achievement gap and improving teacher satisfaction and retention.

That being said, each pilot school took the opportunity presented by blended learning to maximize their most precious resource - teachers.

- In one elementary school, the four 4th and 5th grade teachers decided to departmentalize and split up the 4th and 5th grade students across 3 classrooms instead of 4, leaving one teacher more flexibility to work with small groups of students and coach teachers.
- In the other elementary school, the pilot teachers felt they could successfully handle the increased class sizes without negatively affecting performance. Those teachers also decided to departmentalize so that each teacher could master blended learning with fewer subjects.
- In one middle school, a partnership with Citizen Schools means plenty of extra adults on campus, but blended learning makes those interactions higher quality, especially with uncredentialed staff or staff that is teaching outside their subject of expertise.

We will continue to support OUSD to consider how funding can be reallocated to support blended learning and ensure that every student has access to the best teaching and technology available.
6. Reflections and recommendations

Hardware and software that works is necessary but not sufficient. Although blended learning is not about computers, the computers have to work and be “invisible” before the real work of changing teaching and learning can begin. Unfortunately, the technology isn’t where it needs to be yet, and schools considering blended learning need to understand that. There is nothing simple or easy about this, and dealing with evolving technology and infrastructure will take patience and time away from other work.

We would not recommend that blended learning be widely adopted or pushed at this point, because it will lead to frustration and likely be dismissed as the latest flavor of the month that didn’t work. We need some innovators out in front pushing the ed tech sector and figuring out what works, but the masses should wait at least another year before diving in. Currently, numerous workarounds are required in order to see the benefit of blended learning, and most schools, districts and CMOs don’t have the capacity or expertise to design and support those workarounds. We believe the technology will catch up quickly, but it isn’t there yet. We do need a variety of pilot schools in order to improve blended learning for new & experienced teachers, average & exceptional teachers, urban, rural & suburban settings, low & high performing students, elem, secondary & post-secondary settings, etc.

Educators need time and space to do this well. We don’t ask Apple employees to create the next iPhone in the evenings after they finish their day jobs, and we shouldn’t be asking principals and teachers to design new schools after they finish their day jobs. If at all possible, we need to figure out how to give educators (alongside non-educators) time and money to do the messy design and implementation work that true innovation takes.

We may need to support/ incentivize/ align the ed tech sector. The Gates Shared Learning Collaborative project is a good example. We are not confident that the public education market will behave like private market forces. School districts are not always educated, effective purchasers. The sector is filled with low-quality products. There are no standards for education data, so everything is fragmented and not easily compared or aligned. It's unclear whether the right customers to focus on are schools or direct to families. Hopefully people who are smarter than us will figure this out!

This is ultimately about effective teaching and a lack of supports for effective teaching will not be overcome by blended learning. Getting students using high quality personalized online content is only half the battle. More important is what the teacher does with their newfound access to data and alternate student-teacher configurations. A whole group lesson taught to a smaller group is not going to have a dramatically different outcome. Technology puts personalization within reach for all teachers, but only if they know how to leverage technology to help students take ownership of their learning path and help teachers spend their time more effectively and efficiently.

The box will get bigger, but students will still be constrained by a box unless we move from seat time to mastery based advancement. A lot can be done to improve schools and classrooms within the current paradigm, but as long as we are bound by grade levels and classrooms of 30:1 and seat time, students and teachers will not experience the full potential of technology to accelerate all students to success in college and career.
Read Part Two of this case study, written in January 2013

Join the conversation
BlendedLearningNow - a compilation of all blended learning blogs, videos, news, research and case studies

Blend My Learning - a curated/organized blog by 18+ leading blended learning educators

K-12 Personalized Learning Facebook Group
I. Updates from our existing 4 pilot schools

What is high-quality personalized blended learning? Through implementation, we have become increasingly clear about what high-quality blended learning means to us. Here are a few thoughts:

- In order to have maximum impact, schools must optimize the way they use time/schedules, staff/student configurations (and therefore space), content/curriculum, student ownership, and data. The blending in of technology is really just the enabler that allows schools to truly optimize those other things. We are becoming increasingly clear when we talk to schools who say they are doing “blended learning” but are actually just layering on tech tools to their current structure, that they likely won’t see dramatic change until they optimize other levers as well. The good news is that taking the first step of adding technology within current structures seems to quickly lead schools to want to explore changing structures they never before considered. The bad news is that district schools in Oakland do not currently have the necessary autonomies over budget, schedule and staffing that are needed to optimize all of the levers we’ve mentioned.

- Blending traditional and online instruction is the means, not the end. The end goal is students progressing and achieving mastery at their own pace while receiving immediate personalized feedback, and teachers who have the tools and data they need to differentiate for all students while having a sustainable workload themselves.

- Part of what is so exciting about implementing high-quality blended learning is that it seems to encourage and enable experimentation and iteration by teachers and schools. Traditionally, any iteration that occurs in schools happens in 12 month cycles, which is much too slow for such a complex endeavour like teaching & learning. With blended learning, teachers have the initial data and space to try something for a few days or with a small group, see if it actually works (based on the data), and then throw it out if it didn’t work and improve it if it did. We see teachers dramatically changing their schedules, grouping structures and habits more frequently and with more excitement and openness than ever before.

- The most important role we can play as a foundation is continuing to push innovation and high-quality implementation. It is easy for schools and districts to revert to using technology to solve problems the same way they would have using paper. For example, if a teacher used to have equally sized groups rotate through stations for equal amount of time, it is easiest to maintain that routine but substitute in computers for a rotation. Instead, our Director of Blended Learning is in classrooms pushing teachers to be truly flexible, personalized and mastery based - changing groupings more often and having students on technology for longer or shorter periods of time based on their individual path to mastery. Greg Klein says his role is “to be there when a blended teacher is problem solving in order to push them to find a dramatically better, tech-enabled solution rather than reverting back to what they know.” The Rogers Family Foundation would prefer not to be funding infrastructure, hardware and software in the future and to focus our resources on design, innovation, training and support.
**Infrastructure - Network, Devices, Online Content & Data**

Across our four pilot schools, the infrastructure we planned for and implemented is now working consistently. Approximately 350 student computers work day in and day out, with little to no maintenance. We accessed the warranty for one Lenovo laptop so far. Bandwidth suffices at all four schools with no hangs or slow downloads. The wireless access points that were purchased and installed provide both the coverage and density required of large numbers of simultaneous connections. Teachers and students are now beginning to take for granted that the computers and internet “just work,” and they focus more on teaching and learning.

One specific major success we had with device support was using student helpers at Madison Middle School. Students refurbished over 300 netbook computers over the course of a few weeks. Those netbooks were previously known as the “paper weights” on campus and were simply not used. Now they are throughout the school, in pilot and non-pilot classrooms, consistently used with little further support needed. We brought these machines back to life using boot-able USB thumbdrives with a clean, efficient image of the OS, and then used DeepFreeze to keep them working day in and day out.

From a teacher’s perspective, the usability of online content and other web-based tools has improved, particularly at our two schools partnering with Education Elements, Madison and Korematsu. Whereas in October there were daily help desk tickets submitted around data integration issues and problems with online content, now there are practically zero. At Madison and Korematsu, Education Elements delivered the SSO and data integrations promised during the planning phase and continues to develop and improve their HLMS, including taking pilot teacher feedback. Similarly, individual content vendors worked to improve the reliability of their product, such as Mastery Connect and Revolution K12. Overall, our pilot teachers are very pleased with all the online content they selected, both paid and free.

There are now pilot teachers who see their varied data sets all in one place in the Ed Elements HLMS in order to check how a student or class is performing on a particular standard. For example, a 6th grade math teacher can now determine how her morning class performed on a particular standard as measured by a series of Mastery Connect quizzes, iLearn progress and DreamBox progress, all in combination. Teachers with HLMS access are able to view their assessment and digital content data side by side in the HLMS, while other teachers must still go into each content provider and look at their student data separately. This is due in large part to teachers initially selecting content that was not integrated with HLMS and the broader need to have more integrated content provider options. Students see their data only within individual content providers at this time.

In the case of Elmhurst and Encompass, formerly Junyo schools, we have not yet implemented a new data integration solution. We are working to pilot Clever and Schoolzilla, and are also intrigued by what KickBoard may have to offer. Unfortunately, no platforms currently provide recommendations on what students might work on next (assignability) based on their performance on assessments and digital content, but this is something we are actively looking for from future partners.

These two schools definitely experienced implementation delays when Junyo “pivoted.” The Rogers Family Foundation knowingly took a risk partnering with a startup that didn’t have a product yet. We
would do it again, and it is critical that schools and investors take risks on promising new startups in order to bring innovation to the space; however, before schools consider working with a startup, they need to be aware of the risks and benefits. Start ups often require more of your time and the product typically has a lot of bugs in the beginning. The flip side is that startups are often willing to provide their first customers with a more customized and personal experience and you are able to help shape their product as it is developed. Before getting into bed with a start up*, determine what your risk tolerance is, how much time you have to help them and deal with bugs, and think about the impact on your teachers and students if the product doesn’t succeed and you have to make a switch. The impact on the Oakland schools would have been far more negative if RFF wasn’t there to buffer them and quickly figure out alternatives. RFF will likely continue to play the role of buffer so that we can experiment and support new innovative products while minimizing the potential negative impact to schools.

*also see this blog from Alex Hernandez on “dating” startups

Teacher Entrepreneurs
Across the pilot schools, teachers worked through initial feelings of being overwhelmed by so many online content tools and web sites. Much of the late Fall was filled with teachers going back for their second and third trainings on particular tools, hungry for a more rigorous implementation now that they had had a few months under their belt with students. We saw a clear pattern across the four schools: Summer PD on (too many) tools --> Sept/Oct using tools in a superficial implementation --> additional training and support --> deeper, more rigorous implementation with students --> teacher eagerness for training on new additional tools. Our best implementations of online content are where the teacher has now had multiple “touches” of PD on the tool and has since reframed expectations with students. Also, across the pilot, teachers started the process of getting better by focusing on fewer tools at one time, letting themselves and students dive deeper into how a particular tool works and how it is best used. We highly recommend teachers and students start with fewer tools, and build up from there.

In two of our schools Ed Elements collaborated with school leaders in July to design a week-long summer PD preparing teachers for launch in August. The bulk of the training, which consisted of ten to twelve blended learning PD modules, focused on promising practices of BL classrooms, including routines, assessment, planning, using data, preparing lessons on digital citizenship, and creating a BL classroom culture. Teachers also set goals for implementing BL teaching practices over the course of the year that they would revisit in ongoing PD. In addition, full content provider trainings were shortened to quick jumpstarts to prevent overwhelming teachers with new digital tools. (Ed Elements also helped a few interested teachers planning over the summer to get additional license time in order to have more time to preview and plan with their digital content).

In October, Ed Elements introduced their Blended Learning Rubric toolkit, which lays out the range of teaching practices critical to a successful blended classroom. Teachers at Madison have been piloting the rubric and supporting tools for several months. Teachers first self-assessed their strengths and weaknesses on the rubric reflection tool, which was followed by an observation and consultation by their BL coach, Klein. Klein and Ed Elements then used these self-assessments and observation notes to design rubric-driven follow-up PD. The response has been positive, and teachers have felt that the
rubric gives them clarity on what it means to be a blended learning teacher.

The increased rigor of online-content implementation predictably led to the virtuous cycle of accessing better student data, which then enabled teachers to customize the online experience for kids and to change how they work in their small groups. At Madison, for example, one teacher started to electronically poll her students near the beginning of the class period as part of diagnosing them on that day’s lesson. Students then opt to take the assessment right away if they believe they are ready, move to a computer for additional online practice, or join the teacher-led group for further instruction. Armed with relevant training on their specific online programs, teachers are able to efficiently customize how individual students work through content on the computer. Most significantly, more and more teachers are finding time during the week for a 1:1 flexible model, allowing them to pull highly-targeted small groups for both remediation and extension lessons. Teachers are beginning to feel more efficacious and sustained at the same time.

In addition to opening up grouping options and increased student choice, the rate at which teachers and students “try out” new tools increased dramatically. Teacher colleagues share their favorite tools and try them out the next day with kids. Lessons learned from one tool are applied to the next, greatly decreasing the “implementation dip” of the next tool, whatever it may be. Beyond building fluency with a particular tool, teachers and students are building their fluency in learning new tools in general.

Three other patterns, though not necessarily surprising, are worth noting. First, those teachers with experience in small-group instruction and rotation models have been the quickest to leverage online content and incorporate new tools into their pedagogy. Second, Special Education teachers grasp the power of customized learning and individualized goals much faster, and tend to be more open about allowing students to use computers differently or for different purposes. Traditional teachers still gravitate towards “equality” - for example, all students being on the computer for the same amount of time each day, even though their needs might be different. Lastly, schools that have regularly-scheduled time for teacher reflection show a much higher degree of iteration and experimentation. In schools where PD time has been more sporadic, there has been some growth, but teachers have made less progress with a more surface-level implementation.

SRI will continue their evaluation of the pilot schools throughout the year, with the primary goal of documenting and learning from changes in practice and behavior during the first year and moving to more student data analysis in the second and third years. SRI is using teacher surveys, deep-dive observations in select classrooms, student focus groups and interviews with various stakeholders. We look forward to their first report at the end of this school year.

**Phase 2 Planning**

All four pilot principals will submit an Interim Report by the end of January, in which they will reflect on their blended implementations so far, highlight successes and obstacles overcome, and identify next steps and Phase 2 goals. Site-based teams will convene throughout the spring semester to plan for how their school both broadens and deepens their implementation beginning in Fall 2013 - optimizing more of the levers we discussed at the beginning of this report. In the meantime, at two current pilot schools we identified and supported additional teachers to start blended rotational models this school year -- seizing the opportunity to learn what it takes to get a colleague up and running mid year and
greatly leveraging lessons learned from the early Fall.

II. Central Office Support for a District-Wide Strategy
While our “on the ground” pilot school work makes an immediate and dramatic impact on teachers and students in classrooms, the proof points generated more broadly serve to push District-level thinking and action here in Oakland. To reach scale quickly, Oakland kids need central office leadership to move schools to blended models. Oakland voters recently passed Measure J in November, funding an additional $475 million for facilities. Rogers Foundation is working to ensure that a 1/4-1/5 of those funds go to updating technology infrastructure and putting a device in the hands of every kid in the city. After a series of research visits and project planning, Oakland is well positioned to follow San Diego USD’s lead in this endeavor; SDUSD is 4 years and 4/5 complete with a 5 year plan to be 100% one-to-one. RFF has twice supported Oakland central office staff and leadership to visit and tour San Diego schools, including one Board member and the Assistant Superintendent for Instruction. We forged working relationships between Oakland and San Diego counterparts so that plans can be shared and staff get experienced feedback on ideas and implementation practices.

Along the way, we have introduced and deepened relationships between OUSD central and a variety of best-in-class entrepreneurial ed tech firms and organizations, including Ed Elements, Clever, LearnSprout, Schoolzilla, Achieve3000, EverFi, Common Sense Media, & Google. In many cases, legal agreements have been put in place to speed-up adoption, for example, of Clever’s account provisioning services across the district and across 3rd-party tools. Altogether, the San Diego visits and new relationships, along with the implementation lessons learned from our pilots, position a newly-forming central office team to lead this work and “flip” the District over the next few years, beginning as soon as Fall 2013.
III. Looking to the future and Cohort II

Based on early successes, we know that Oakland kids have much to gain from growing our portfolio of pilot schools. Expanded proof points help keep central office staff learning about what it takes to be in service of schools and students academic needs. Additionally, we believe our district pilot schools have yet to land on a truly breakthrough model of instruction that will dramatically change and improve learning outcomes for students. Our district pilot schools have optimized many aspects of instruction, but without autonomy over budget, scheduling and staffing, they are limited in their ability to fully optimize learning for all students.

Twelve Oakland schools, both district and charter, applied to join Cohort II and receive funding for Fall 2013 implementations. From these twelve, we will choose seven to receive planning grants and enter into a three-month planning process to more thoughtfully develop meaningful plans for “going blended” in the Fall. These design processes will culminate in a final presentation, from which we expect to fully-fund 2-3 schools over three years as they move to blended school-wide. While we are committed to seeing this work through in District schools, we are particularly excited and curious about supporting local area charter schools to implement and model new innovations that may be less easily adopted in traditional schools given current restraints. It will be interesting to compare the results in successful district implementations with successful charter implementations that are also able to play with more of the levers we’ve mentioned.

Our two-phase investment approach comes from learnings from cohort 1. We found that school teams all had really good intentions about how much they were going to be willing to change and innovate, but that until we actually worked side-by-side with them to design and implement, it wasn’t clear what their full commitment would be. For example, one school really needed to switch to a block schedule in order to make blended-learning rotations work, but they decided not to make that change due to other implications. We have chosen to make an initial investment in more schools and after working with them for 2-3 months we will have a better idea of where we want to make larger implementation investments. Schools that do not receive implementation grants from Rogers will still have solid design plans that they can move forward implementing themselves or pursue other grant opportunities.

Our cohort 2 grants will be smaller than our cohort 1 grants for several reasons. First, we are hopeful about more investment from the district/CMO level and from measure J funds, which will decrease the investment we have to make in infrastructure and hardware. Second, the cost of computers has decreased over the past year and we are confident that cheaper computers such as chromebooks, or refurbished computers from OTX-West, when configured correctly, work just as well as more expensive computers. Third, we believe that each school/classroom should start with fewer online content providers, and especially fewer paid content providers - using free content to fill in gaps. Finally, a variety of launchpad, account provisioning and data integration providers are coming into the space at free or lower cost-points than previously available.

The Rogers Foundation continues to believe that blended learning is the highest leverage investment we can make. We believe that it can (1) increase student mastery and achievement, (2) increase student ownership and agency, (3) increase teacher satisfaction and efficacy, (4) attract middle and upper-income families back into Oakland public schools, and (5) increase innovation and continuous learning at the district level. Technology has changed dramatically in the year since we started
planning these pilots, and yet online software and data integration is still nowhere near where it needs to be. Schools who jump into blended learning will feel immediate “wins” but still need to be prepared for frustration and complexity and workarounds. We hope that additional local foundations consider investing in high-quality blended learning.

- A strong network of local foundations working to promote high-quality blended learning can be found at www.education-cities.org/.

- The Learning Accelerator was recently started to support districts who are considering blended learning as a core strategy.

Please contact us with feedback and ideas!

Greg Klein - gklein@rogersfoundation.org  
Carrie McPherson Douglass - carrie@education-cities.org
Since our last writing in January 2013, this “Pilot Update” describes an additional year’s worth of planning, design and implementation progress for the Rogers Family Foundation’s Blended Learning Initiative in Oakland, CA. Like the field in general, we continued to learn, grow and evolve, and hope that our experience can help you to ask the right questions, consider tradeoffs, and learn from challenges we have experienced. Please visit our website for a resource list and more information.

We remain incredibly hopeful about the progress and promise of blended personalized learning. We also maintain confidence that our teachers and students are already benefiting from this initiative, and expect that the short and long term results will be positive. That being said, we are in the “top of the second inning” in this work, and the “pitching changes” of online content and “late-game pinch hitters” that we expect will come with technology infrastructure evolution and continuous improvement of teacher professional development make this a complex, messy, but unquestionably innovative game changer for transforming education. We hope that this candid update will inspire you to pursue blended personalized learning and also highlight potential obstacles that you should anticipate and plan to encounter.

Updates from Pilot School Sites

In the Fall of 2013 we reached some major milestones in our Blended Learning Initiative. Our eight pilot schools launched their implementation at the beginning of the school year, differentiating instruction that collectively reach nearly 3,500 students every day. In large part, teachers in our pilots have the devices, network, and content infrastructure they need to deliver lessons in a blend of small group instruction and adaptive online content. In the course of a few short weeks at the beginning of the 2013-2014 school year, and with the excitement and enthusiasm of teachers and students, we successfully deployed approximately 1,000 chromebooks across the eight sites. At the same time, Oakland Unified School District’s (OUSD) Network team installed over 40 state-of-the-art wireless access points to ensure that classrooms would not experience connectivity issues. Most of the initiative’s on-going support focuses on helping teachers get as much out of this infrastructure recipe. This means:

- (re)training teachers on specific programs or tools;
- (re)connecting teachers to professional trainers and coaches;
- (re)connecting teachers to one another so they can learn from peers and ask questions;
- troubleshooting various (and relatively minor) technical issues.
We have a handful (and growing number) of teachers who are truly innovating at each site and are pushing their peers to both play and learn alongside their students.

**School Implementation Snapshots - Cohort I**

Our original four pilot schools are all each growing and deepening their work. Last year’s test results on the California Standards Test (CST) - R.I.P. CST - for our blended classrooms were mixed, with gains and dips across schools in both English Language Arts and Mathematics. While we are disappointed that not all of our blended learning classrooms immediately boosted student outcomes, we believe greatly that we will see dramatic increases in the years to come as Oakland, and California at large, complete their transition to the new Common Core State Standards and the new Smarter Balanced Assessment Consortium (SBAC) online exams. It is our belief that when teachers and students both have more consistent experience in a blended environment that efficiencies will be realized and more personalized instruction will lead to better results for all students. To put it simply, our teachers and students rightfully still need more practice!

In the 2014-15 school year, Madison, Elmhurst, EnCompass and Korematsu will all enter their third and final year of support. All the schools are nearing 1-to-1 infrastructure capacity, and their implementation is growing to practically every single teacher and student at their sites. By this time next year, they will be considered fully blended school sites. The vast majority of on-going teacher support is facilitated by experienced blended teachers at these schools, and on-going digital content costs are sustained by the school or by OUSD’s central dollars. Given the progress made so far, we are happy to report that beyond simply being “on budget,” some of our sites are well within their original budget expectations and are in exploration as of this writing on how best to spend their final grant dollars. As such, this leads us to two key actions: 1) not spending resources until clear needs are surfaced and 2) help our sites push their thinking/learning innovation curve by facilitating visits to top innovative blended schools in Spring 2014 for OUSD principals, central staff and teacher leaders.

**School Implementation Snapshots - Cohort II**

In 2013-14, we added a second cohort of four schools: two district schools and two charter schools. Through critical lessons learned from the original implementation sites, we enabled Cohort II to rapidly launch their programs and get students engaged quickly.

- **Edna Brewer** and **Bret Harte**, both OUSD middle schools, are in their first year of implementation with Edna Brewer focusing on English Language Arts and Bret Harte on Mathematics. Both schools transitioned their pilot classrooms to a blended environment much more quickly than what we experienced last year. The implementation at these Cohort II sites was simpler: same devices throughout; easy-to-customize launch pages; free single-sign-on options with “log-in with Google;” and an emphasis on digital citizenship and responsibility. Both schools are also focusing on a single academic content provider, which greatly streamlines their professional development needs. Each school plans on doubling its implementation in 2014-15. Our Spring 2014 planning is focusing on two questions: 1) how can current blended teachers lead and support their new-to-blended colleagues (sustainably scaling “the basics”)?; and 2) how does the school create a space for innovative blended teachers to push what is possible and further experiment in a drive towards personalization? Both schools received morechromebook infrastructure from OUSD than we originally provided, (see “OUSD’s Chromebook Deployment” below) and neither are using premium content solutions paid from grant funds. These remain lean, scalable and, supportable pilots, with a focus on teacher ownership and choice. The work now transitions to how we support teachers to further “let go” and create opportunities for students to drive decision-making and their own learning.

- **Aspire Public Schools’ Millsmont Elementary** implemented a lab rotation model. Millsmont uses modular furniture in the lab in order to group students into “pods” of four. This orientation allows students to have face-to-face interactions as needed or work individually on their computers. The lab is very simple and cost effective: no charging cords running everywhere, no electrical outlet upgrades, and no internet wires. Everything is mobile, wireless, and the laptops charge in a cart overnight. We believe that this is the future of building computer labs: mobility and flexibility with minimal capital upgrades and limited impact of critical, dedicated facility space.
ASCEND is the last of our new pilots and it too has experienced a relatively smooth start to the school year. Network upgrades needed to be addressed early on, resulting in a slightly delayed full launch of their implementation. ASCEND is a K-8 former OUSD school that is now a charter school with local CMO Education for Change. The ASCEND deployment is our largest — 200 chromebooks in 18 classrooms — reaching every teacher and every child in every classroom.

Greatly aided by their increased level of Home Office support specifically for blended personalized learning, both our charter schools, ASCEND and Millsmont, remain strong and future planning is well on track. With its unanimously approved new charter secured for Fall 2014, Millsmont will be re-launched as a brand new, all-blended school: Aspire Triumph Technology Academy (ATTA). The new school will be modeled on Aspire Titan in Los Angeles, now in its third year of blended learning. While ATTA is a wholly new school, all of our prior blended investments will continue to pay dividends, and our Year Two and Three dollars provide Aspire Public Schools the backbone to scale their proven Titan model here in Oakland. ASCEND’s implementation already touches every single teacher and student across Kindergarten to 8th grade. Year Two funding will strengthen teacher practice with adaptive online content. Like Aspire, ASCEND – and all of Education for Change – is fortunate to have a Home Office-provided Director of Innovation and Technology, who supports the entire charter management organization’s transition to fully blended schools.

**Preliminary Outcomes**

*Evaluation of Year One: Results from SRI Study*

Before launching Cohort I, the Rogers Family Foundation commissioned SRI International to conduct an analysis of our pilot schools’ first year of implementation. The evaluation looks closely at the formative development of implementing blended learning at these schools, and shares lessons learned. While there is great value in documenting this work for the field, it should also be noted that this work is fluid and fast-changing. Many of the recommended improvements in technology infrastructure, online content, and teacher training and development were identified early on by the Rogers Family Foundation staff and course corrected in time for the selection and deployment of Cohort II. Data for the evaluation was collected through teacher surveys, classroom observations, school visits, teacher and principal interviews, student focus groups and stakeholder interviews. The full evaluation can be found [here.](#)

**Trends from Sites**

With respect to student outcomes, we can now share a few high-level data points. Results cannot be directly attributed to the introduction of blended personalized instruction, but they speak to the contributing impact of our initiative’s work in these schools:

- Discipline referrals have dropped by 62% in Elmhurst’s 1-to-1 8th grade classrooms.
- At Korematsu, the percentage of students reading at grade level, as measured by Scholastic Reading Inventory (SRI), has more than doubled from 10% in August 2013 to 24% in January 2014.
- Based on results from the Children’s Progress Academic Assessment, between ~70% of ASCEND’s K-2 students achieved or surpassed their projected growth in Phonemic Awareness/Phonics. Of these same students, between ~70% achieved or surpassed their projected growth in reading.
- In half a year at Edna Brewer, students have gained an average of 97 Lexile points in reading as measured by Achieve3000’s LevelSet assessment - the equivalent of one year’s growth in just half a school year.

An important new data point we are collecting this school year is the perception of both teachers and students regarding the blended personalized learning experience. Through brief 5-10 minute student and teacher surveys we are able to collect a perception of the quality of instruction and learning in a blended classroom. Although the overwhelming majority of students surveyed had just begun to experience blended learning last Fall, nearly six out of ten preferred working in a combination of small groups and with computers, as opposed to whole-class lessons with their teacher. Similarly, due to expansion within and across schools, the vast majority of our blended teachers were just in their opening months of implementation when surveyed, yet 94% of teachers were either neutral to or “pro-blended,” with only 6% indicating that they would not recommend this work to a peer. Half of all teachers indicate that they are already solid supporters of the pedagogy. Additional findings include:

- In Fall 2013, students across the pilot sites agreed or strongly agreed that digital content helped them stay on-task (57%) and understand their lessons (58%). Comparatively, when asked about the use of small-groups, 51% reported it helped them stay on task and 60% reported it helped them understand the lesson.
Teachers across sites agreed or strongly agreed that student engagement increased due to the use of small-group instruction (77%). In addition, when asked about increases in student understanding, 78% agreed or strongly agreed this was being supported by increased small group instruction. Teacher responses to the impact of digital content on student engagement and student understanding were slightly lower, coming in at 57% and 38% respectively. The difference between how teachers view small group instruction vs. digital content could be a reflection of how early the survey was given in relation to implementation as well as the fact that both teachers and students are still in an “early learning” phase with how to maximize the power of digital content for student learning.

All of our sites have innovative teachers investigating how different their classrooms truly need to become to meet student needs. There are also teachers for whom implementing a single online content provider in a rotation model is all they can effectively manage at this point. Regardless of where they are on this professional development spectrum, we seek to push their practice and keep their eyes on the end goal of personalizing education for students, i.e., that this initiative is much more than simply having kids work online for part of the school day.

Updates from the Systems Level

When we began this work in 2011, formal blended instruction did not exist in OUSD and only one or two “bleeding edge” innovative Oakland charter schools attempted this work. Our initiative was born of the need to push what was possible in our schools and as a response to our very own grantees who asked for more. Now three years later, our eight pilot schools are joined by at least five more district schools and practically every charter in the city in actively leveraging adaptive online content to personalize instruction. Over the past year, we have seen an extraordinary reach from the balance of schools in Oakland seeking knowledge capacity and technical assistance from us, and the opportunity to apply for future blended learning cohorts.

OUSD’s Chromebook Deployment

Beyond dramatically increasing the number of schools interested in doing this work, our blended initiative leveraged over $4 million from other philanthropic and public funding sources. Most of this comes in the form of OUSD investing half of its one-time Common Core dollars from the state on technology infrastructure ($3.5 million). OUSD is now poised to deliver significant device and network upgrades to every school in the district that builds off of our blended learning initiative’s lessons on chromebooks, training teachers and SBAC-preparedness.

Beyond network connectivity, student devices and their ancillary operating systems are a second foundational, infrastructure ingredient in any blended, personalized implementation. Since the beginning of our initiative back in Winter 2012, schools and the Rogers Family Foundation have been concerned about mid- and longer-term sustainability, particularly when it comes to student device life cycles. To this end, we are very excited that OUSD dedicated the use of one-time funds issued by the state for Common Core implementation to deploy chromebooks at every OUSD school. A few high-level bullet points about what this $3.5 million deployment includes:

- OUSD is on pace to configure and deliver a total of approximately 8,000 chromebooks that will reach every school in the district by the end of April 2014.
- Every set of 34 chromebooks will come on a charging/security cart, and each cart comes with its own state-of-the-art, cloud-controlled wireless access point.
- The new access points will run a new, modern, optimized-for-chromebook wireless network, promising increased speeds and connectivity.
- Many district schools doubled-down on the deal by buying even more with their own site funds.
- Logistics and decision points – from device/cart to padlocks to authoring training documentation and support protocols for teachers – are directly informed by our pilot sites’ experiences with chromebooks in classrooms.

To be clear, 8,000 chromebooks is a lot. At the same time, it remains important to remember that this represents the absolute minimum OUSD needs to deploy in order to minimally administer the new SBAC assessments online beginning this Spring. It is roughly one-third of the way to a full 1-to-1 initiative. To teachers and principals, this absolutely feels like a first “down-payment” for what needs to be a much larger deployment by the district. It should be noted, however, that in our six district blended pilot sites this deployment fundamentally answers our sustainability concerns for the foreseeable future, and opens up new opportunities for how our grant dollars flow to new, more innovative areas of support.

Why Chromebooks?

After working with our pilot sites over the years and experiencing the pluses and minuses of a variety of devices, Blended Learning Director Greg Klein determined that chromebooks (at this time) are the simplest devices to set-up, deploy, maintain, and give tremendous curricular flexibilities. This fun animated video pretty much sums up the magic of the chromebook.
The Federal Communications Commission and E-Rate Reform

Before devices can be successfully deployed, the foundational ingredient to any blended personalized learning implementation must be addressed: internet connectivity. OUSD is in need of major upgrades to meet the growing network demands of principals, teachers, and students. Our partner, the EducationSuperHighway, developed their national School Speed Test to give schools and districts the information they need to make smart upgrades. Oakland’s connectivity needs are vast and varied, as depicted in the graphic below bandwidth speeds from 0-100 mbps. Even within this small school sample, there exists tremendous variability in the quality of connectivity in Oakland schools. While significant upgrades are planned for the short- and medium-term, this issue will need to be constantly revisited to maximize blended personalized teaching and learning.

In January, OUSD, the Rogers Family Foundation and EducationSuperHighway co-hosted Federal Communication Commission Chairman Tom Wheeler as he visited Edna Brewer Middle School. The visit was a rousing success, culminating in Mr. Wheeler commenting on “the fact...that we have moved from the era of ‘computers in the classroom’ where a few PCs sat along the wall for occasional use, to ‘computers on the desks’ where students interact on an ongoing basis to not only learn their lessons, but also to acquire the computer literacy skills necessary for 21st Century careers.” Additionally, in his State of the Union address just a few weeks after this visit, President Obama put forth the goal of ensuring that 99% of the nation’s public schools have their network connectivity and broadband needs met within five years.

Looking Ahead

The pilot sites have proven to be critical and exciting learning laboratories that inform the work not only in Oakland, but nationally. Maintaining our multi-year commitments to our pilot sites is necessary as certainly there is much more work to be done in their classrooms. Not nearly enough of our pilot teachers can eloquently explain the power of this work. Nor are all our pilot implementation sites particularly bold compared to some of the Bay Area’s most innovative charter management organizations. Nor do we have undeniable academic success stories to share across the board. A “hunkering down” with our current schools may best serve to create more consistent success and fidelity. Continuing momentum by adding more schools - while relatively expensive - may perhaps identify and nurture truly innovative-yet-currently-unknown leaders and teachers to champion this work.

Personalized Learning in Oakland

In Summer 2013, OUSD, in collaboration with the Rogers Family Foundation, Oakland Public Education Fund and Education for Change (EFC), won a $100,000 planning grant from the Bill and Melinda Gates Foundation to design a system-level approach that would expand and strengthen blended personalized learning for Oakland students. Our “System Design Team” was co-led by OUSD Technology Services Project Manager Tracey Logan and our Director of Blended Learning Greg Klein. The two worked closely with a technical assistance team from the Parthenon Group (provided also through Gates Foundation) over 18 weeks to plan for Oakland’s at-scale transition to Personalized Learning schools. Planning for this work engaged all of OUSD’s senior staff and leadership (Superintendent and the senior cabinet positions), and positively connected EFC and OUSD in wholly new ways. The Strategic Plan for this work was completed at the end of January 2014. At the time of this writing, the direction of future funding for this work remains uncertain, but much is being done to ensure that the plan will not be another that simply sits in some shared file system. The Rogers Family Foundation is committed to leading the way with both our own dollars as well as raising the necessary resources from several promising leads to ensure this work moves urgently forward.
While the work continues to identify funding resources to implement the system-wide blended personalized learning strategic plan, the plan’s completion and the strengthening of relationships with OUSD and charter community is already proving fruitful in a few key ways:

- New conversation and planning is now in place for how OUSD might spend future curriculum adoption dollars in support of adaptive digital content, further enabling high-quality blended implementation that can be sustained and aligned within the district’s existing funding streams.
- Building off the work of the System Design Team from the Fall planning process, district leadership has formally directed staff to form OUSD’s new Personalized Learning Leadership Team, made up of six different cross-departmental staffers, representing 2.5 full time staff. This team further formalizes the working group that drafted our blended, personalized learning strategic plan.
- The Rogers Family Foundation continues to embrace and champion this work, and has begun to actively reach out to other local, regional, and national funders to seek support for the strategic plan’s implementation.

Given all of this, the work of selecting a new cohort of schools will be completed in late Spring 2014. This Personalized Learning Cohort (as opposed to Blended Learning, see next page) will apply for planning grants and technical assistance supports. We anticipate schools will be chosen by May 2014, and will work over the summer to design a cohort of new Fall pilots. In early Winter 2015, these Personalized Learning schools will create and pitch more comprehensive implementation plans for the possibility of ongoing support from the Rogers Family Foundation.

The Language of Blended Learning

There is clear movement in the field around the nomenclature of how we characterize this work. “Personalized Learning (PL)” or “Blended Personalized Learning” are quickly displacing “Blended Learning” – just as “Blended” displaced “Hybrid” about two years back. Equally as important, the terminology shift to “Personalized Learning” creates a bigger, more inclusive tent that embraces other philanthropic initiatives currently in play such as the Irvine Foundation’s “Linked Learning” investments and the Hewlett Foundation’s “Deeper Learning” approach. The move to the language of “Personalized Learning” serves to emphasize the notion that the work of Next Generation Schools remains committed to giving students much greater degrees of self-determination and choice in their education and that blending becomes one frequently-deployed strategy within the larger frame of personalization, self-pacing, mastery-based progression and self-direction. Perhaps most importantly, we believe this shift in theory and practice is very likely to further push teachers even more to firmly support and champion Next Generation learning.

Please be in touch with feedback and ideas!

Greg Klein - gklein@rogersfoundation.org, @gregdklein, & doodle.com/klein
The Rogers Family Foundation (RFF) Blended Learning Pilot (BLP) was first initiated in the fall of 2011 and formally completed in spring 2016. Along the way, RFF documented progress and shared insights. This document closes the chapter on this journey, sharing the highest-level findings and lessons learned from this multi-year, multi-school, cross-governance pilot project. Final lessons learned and outcomes are organized into three major categories: infrastructure, perspectives and beliefs, and student outcomes. We also look past the BLP, examining how it informed current and future work supporting Oakland public schools.

For more information about the purpose, inception, and intermediary progress of the BLP, please visit the Blended Personalized Learning Strategy section of the Foundation’s website to review previous published case studies.

Infrastructure

“Back to school” in the fall of 2016 in Oakland looked significantly different than it did five years earlier. Student-facing computers in 2011 consisted primarily of traditional computer labs wired to slow internet, running out-dated versions of Microsoft Windows. The BLP deployed approximately 1,000 student-facing devices across eight schools, including OUSD’s first 600 chromebooks. Now there are over 20,000 chromebooks across Oakland’s district-run schools alone -- more than enough for students to have access on a daily basis. Today, every OUSD teacher has a chromebook. Instead of schools creating and managing their own site-based G Suite deployments, OUSD now creates, manages, and syncs over 35,000 accounts for students and teachers. Accessibility and functionality have dramatically changed for the better. There are now state-of-the-art wireless access points in every single district-run classroom, all controlled and managed remotely by OUSD Technology Services. Because of the access point installation and major “backbone” upgrades in network closets across schools, download speeds have increased five times, and internet filtering now protects children without blocking reasonable instructional use by teachers. When OUSD school leaders want to invest further, they can navigate to a simple, updated online marketplace where they can purchase a full cart of 34 chromebooks for under $10,000, which, upon delivery, can roll off a truck and straight into a classroom for students to use immediately.

The BLP also supported OUSD to pilot high quality instructional programs. Two BLP schools tried out Spatial Temporal Math (ST Math), and based on their promising results, the district invested in bringing the award-winning program to over 40 other schools. Furthermore, while some school systems built infrastructure focused on accessing a few key applications or only support a single platform, every single OUSD student and teacher can use free, open educational resources including Google Apps, Khan Academy, Wikipedia, and the rest of the World Wide Web. This can happen from any device type. The BLP learned early that it needed to make access and the interface easy. It created OUSD’s first view-only Google Doc launch homepages, which are now deployed to every school in the district. These homepages allow students to access a select set of educational resources curated by their teachers.

### Blended Learning Pilot Schools

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<td>Edna Brewer Middle School</td>
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Unlike other large public school system device deployments during this same timeframe, OUSD’s chromebook rollout was a smashing success in creating opportunity for children and responsibly investing taxpayers’ dollars. Prior to OUSD’s investment, over the course of the four grantmaking fiscal years of 2012-2015, RFF invested $1,065,000 across eight schools. This works out to approximately $33,000 per BLP school per year, over four years. Philanthropic partner investors additionally contributed approximately $500,000 over those years. Near the end of this time period, OUSD spent approximately $4,000,000 from its own budget on technology infrastructure, most of which came from one-time funds from the State of California to help districts transition to the Common Core and administer new assessments. For the BLP, every RFF philanthropic dollar leveraged approximately four public dollars -- an important consideration in ensuring public system ownership and long-term management of these resources. Overall, the BLP and OUSD invested mainly in devices and internet access, along with some teacher training. In keeping with the lean but essential investments of this time-limited initiative, it is noteworthy that during this period of rapid technology infrastructure upgrades and expansion, OUSD Technology Services did not increase its staff, but highly prioritized their time to be critical partners in this work.

Perspectives and Beliefs

With new infrastructure in place, it is safe to say today that Oakland students and teachers are never going back to the days of classroom instruction without the aid of quality internet access and devices. Over the coming years, the types of technologies and the solutions they enable will likely continue to change and develop, just as technology itself does. At the same time, the textbook alone as the sole means of instruction for course after course, all day long, will not return. Teachers have long known that “teaching to the middle” was an undesirable output deployed as a means for creating a sense of sanity and sustainability in what was too often a chaotic and unsustainable environment. One-size-fits-all instruction has not yet been banished from all Oakland schools, but the basic technological ingredients have supported large numbers of teachers to target instruction, group students appropriately, and support learners of all types. With new tools to support the administrative components of their jobs, teachers are also now more free to spend their time doing what brought them into the profession in the first place -- namely, teaching. Interestingly, Oakland’s time during the chromebook deployment coincided with district-wide emphases on restorative justice, building student agency, and growth mindset. Together, these pedagogical moves and beliefs create tremendous opportunities to accelerate student outcomes.

According to OUSD’s Clarity Survey results from BrightBytes, over 80% of OUSD teachers agree or strongly agree that “technology use in class can enhance student learning” and also that they “want to learn more about effective technology use for teaching and learning.” Teachers also report that they need more time to collaboratively plan, train, and develop. Where there is a will, there exists a need to continue to support all public schools to provide a way. One strategy is OUSD’s continued support of their Data and Technology Teacher Leaders (DTLs), who are convened monthly for relevant training, networked in an online community, and expected to be a first-responder at their sites when issues inevitably arise with their peer teachers.

Student outcomes

One might argue that students just being able to sit for the computer-based Common Core aligned online Smarter Balanced Assessments (SBAC), which are part of the California Assessment of Student Progress and Performance (CAASPP) system, is a major infrastructure win. That Oakland moved to provide CAASPP student achievement data without major incident is remarkable. Similarly, OUSD can now administer its own internal online benchmark exams with much greater ease and regularity. Our pilots, however, only supported limited numbers of teachers at each school, and nowhere were we resourced to fully scale our teacher-facing support across an entire school.

The BLP Cohort Profile (below) shows school-level outcomes on the 2016 English Language Arts and mathematics SBAC assessments, along with growth in performance from 2015. In both English Language Arts and Mathematics, half of the cohort grew faster than the district as a whole. There were BLP pilot teachers with some of the strongest reading gains in the city, at both the elementary and middle level. Although overall school-wide achievement remains low, it should be noted that school-wide student academic outcomes clearly rely on investments targeted at the whole school as the unit of change. The BLP helped start the system moving in a direction, but work remains to close achievement gaps and bringing the promise of high quality education to every Oakland student.
Looking ahead

Soon after the launch of BLP Cohort II, RFF gained an opportunity from EDUCAUSE to apply for and win a Next Generation Learning Challenge Regional Fund grant, now known as NGLC in Oakland. BLP infrastructure and school design lessons learned were already applied to that grant application process in spring 2014. Since NGLC in Oakland began, 26 public schools applied for planning grants, 10 of which received awards totaling $720,000. Seven schools eventually were awarded launch grants totaling $2,250,000 over three years. These schools each already started their work with NGLC in Oakland taking full advantage of the infrastructure investments and knowledge gained during the BLP. Building from there, school teams focused on designing school-wide innovative pedagogical models of instruction that may have started with blended learning, but much more clearly emphasized the north star of personalized learning. NGLC in Oakland specifically called upon schools from the start to think about how they would strategically scale successful pilots to school-wide models. As of this writing, RFF is developing plans for a second wave of school-level investments further informed by the promise and progress of these first seven NGLC in Oakland school launches.

-Greg Klein
Senior Director, Innovation and Learning
@gregdklein

<table>
<thead>
<tr>
<th>School Name</th>
<th>School Type</th>
<th>Planning Grant</th>
<th>Launch Grant</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCEND</td>
<td>Charter</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>East Bay Innovation Academy</td>
<td>Charter</td>
<td></td>
<td>X</td>
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<tr>
<td>Envision Academy High School</td>
<td>OUSD</td>
<td>X</td>
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<td>Garfield Elementary</td>
<td>OUSD</td>
<td>X</td>
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<td>La Escuelita Elementary</td>
<td>OUSD</td>
<td>X</td>
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<tr>
<td>Lodestar</td>
<td>Charter</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Oakland Unity Middle School</td>
<td>Charter</td>
<td></td>
<td>X</td>
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<tr>
<td>Redwood Heights Elementary</td>
<td>OUSD</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Roosevelt Middle School</td>
<td>OUSD</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Urban Montessori</td>
<td>Charter</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Urban Promise Academy Middle School</td>
<td>OUSD</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Summary for 2013-14
- 4 OUSD schools in Year 1 (two elementary and two middle)
- 2 OUSD middle schools in Year 2
- 2 local charter public schools in Year 2 (one elementary, one K-8)
- ~60 pilot teachers
- ~3500 students in pilot classrooms (K-9th grade)
- various online content programs
- thousands of devices

In Fall 2011, the Rogers Family Foundation responded to several innovative and thoughtful leaders who requested deeper investment in digital content and technology at their schools. After a rigorous selection process, four East Oakland schools were chosen to participate in Cohort 1 of a Blended Learning (BL) Pilot in 2012-13. Selection for Cohort 2 began in Spring 2013 for 2013-14 launch. This initiative work effort isn’t about computers. Together, Oakland USD, charter public schools, pilot sites, and our partner foundations are committed to fundamentally changing and improving teaching and learning.

As one of the few district/charter, multi-school, comprehensive blended learning initiatives in the nation, this project has both local and national significance. Districts across the country benefit from our learnings around project management, budget, tech infrastructure and support, training, data integration, and what it takes to successfully transform existing schools into blended learning schools. In addition, Oakland USD specifically will build critical capacity to support instructional technology and data analytics to support their vision of Personalized Learning.

Theory of Change
We believe that Blended Learning can leverage and improve four primary areas of practice:
- Personalization of content and instruction
- Data driven instruction that drives differentiation in student learning
- Small group instruction
- Student ownership of their learning and decision-making

Typical Model Design
Whether rotating within the classroom or a computer lab, much of the power of blended learning comes from a teacher being able to focus on a smaller group while other students are receiving personalized, adaptive content that the teacher doesn’t have to create and that provides useful data about each student.
Pilot Schools
All eight schools have a solid foundation with strong leadership, a collaborative professional learning culture, support from their Central Office, an innovative vision for technology, a good instructional foundation, good classroom management, and a data-driven culture.

Cohort I
- Korematsu Discovery Academy (K-5)
- EnCompass Academy (K-5)
- Madison Park Academy (TK-9)
- Elmhurst Community Prep (6-8)

Cohort II
- Edna Brewer MS (6-8)
- Bret Harte MS (6-8)
- ASCEND (K-8) - Education for Change
- Millsmont (K-5) - Aspire Public Schools

Each school worked to design their Blended Learning model, select hardware & content, train on new programs and participate in on-going coaching and professional development. They are all working closely with the Rogers Family Foundation on evaluation and assessing their progress.

Desired Outcomes

<table>
<thead>
<tr>
<th>Teacher Practice</th>
<th>Student Outcomes</th>
<th>System Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased comfort and efficacy with: small group instruction; technology to enhance teaching and learning; differentiating instruction; and using data to inform instruction</td>
<td>Near term: increased student engagement, student agency and student attendance</td>
<td>Increased capacity: improved IT support; expanded capacity for instructional coaching involving the use of technology; flexibility</td>
</tr>
<tr>
<td></td>
<td>Long term: increased student academic achievement</td>
<td>Replication to additional OUSD schools</td>
</tr>
</tbody>
</table>

Pilot Timeline: 2012 to 2014

Cohort III schools design and prepare; OUSD SBAC infrastructure deployment across District Schools (see right sidebar for details)

<table>
<thead>
<tr>
<th>Cohort I schools design and prepare</th>
<th>Cohort II schools design and are selected</th>
<th>Cohort III will launch a more in-depth planning year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring 2012</td>
<td>Fall 2012</td>
<td>Spring 2014</td>
</tr>
<tr>
<td>Fall 2012</td>
<td>Spring 2013</td>
<td>Fall 2014</td>
</tr>
</tbody>
</table>
| Cohort I schools launch            | Cohort II schools launch Year 1; Cohort I schools launch Year 2 |}

“Technology changes the way teachers teach, offering educators effective ways to reach different types of learners and assess student understanding through multiple means. It also enhances the relationship between teacher and student. When technology is effectively integrated into subject areas, teachers grow into roles of adviser, content expert, and coach.”

Oakland USD Principal
Innovation

ASCEND’s first blended model centered on identifying a specific adaptive program for each grade. Due to varying student needs, they quickly learned that multiple adaptive programs are needed at each grade level. To support this shift, ASCEND devised a strategy to share the multiple devices required among classes as well as purchased hardware and headphones to support use of the programs. Teachers were also trained on the programs and how to analyze different types of data to understand student progress. In the end, ASCEND has been able to individualize instruction at a whole new level. Students with gaps are getting the intensive support they need and advanced students can be more challenged. Teachers have developed a high quality guided reading program and their comfort and confidence with technology has resulted in more experimentation with tools to enhance learning.

Goals

- Leverage blended, personalized learning to better meet students’ individualized learning needs.
- Increase student achievement in English Language Arts, specifically in phonemic awareness/phonics and reading.
- Increase student achievement in math.

Focus Areas for 2014/15

Over the next year, ASCEND will focus on the following areas to sustain and increase the effectiveness of blended, personalized learning.

1. Develop Professional Learning Communities (PLCs) focused on data-driven blended learning, student data analysis and goal setting, and creating personalized learning plans based on students’ academic profiles.
2. Secure additional devices to spread implementation of Reading Assistant to more students.
3. Assess the effectiveness of current math digital content.
4. Assess the current structure for the Tech Coach program (middle school student coaches for K-3 students during blended rotations) to ensure maximum effectiveness.
School Background
ASCEND is an arts-integrated K-8 school that emphasizes family and community partnerships. The mission of ASCEND is to close the achievement gap in Oakland. To make a positive difference in the lives of young people, ASCEND offers engaging and rigorous instruction and builds strong relationships between parents, teachers/staff, students and community. ASCEND is dedicated to developing leaders and mentors who create a more compassionate, equitable and just society.

The blended rotation model had made it possible for us to individualize instruction at a level we have never before achieved. Students who have gaps are getting the intensive support they need and advanced students are being more challenged.

Hae-Sin Thomas, CEO, Education for Change

Model Design
ASCEND adopted a “workshop” classroom of in-class rotations Kindergarten through 8th grade where students work individually and in small groups on targeted activities in their ZPD while a teacher works with a targeted small group. In all classrooms, teachers and students have access to enough devices to run three-group rotations, with some classrooms 1:2 or 1:1 at certain times of the day. Adaptive online learning enables students to work independently in their ZPD and provides those students constant feedback. The result is that the time students are spending away from their teacher is efficient and powerful. The online content programs also provide constant progress monitoring reports for teachers so they can receive daily data on student usage.

“Job to Be Done”

<table>
<thead>
<tr>
<th>Attendance, GPA, Suspension, Behavior</th>
<th>AERIES SIS</th>
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<tbody>
<tr>
<td>Grades and Assessments</td>
<td>NWEA MAP</td>
</tr>
<tr>
<td>State Data</td>
<td>CMA (by strand), CST (3 years longitudinal), CELDT, SBAC</td>
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<tr>
<td>Benchmarks</td>
<td>Illuminate</td>
</tr>
<tr>
<td>Digital Content</td>
<td>Achieve3000, ST Math, Google Drive, Fast4Word, Reading Assistant, Exit Ticket</td>
</tr>
<tr>
<td>Account Management</td>
<td>“Log-in with Google” and Clever</td>
</tr>
</tbody>
</table>

Hardware
- 200 Chrombooks
- 10 wireless access points
- iMac Lab and Linux Lab
- MacBook cart

Sample Student Schedule
- 8:30-8:55am Morning Meeting/Buddy Reading or Journal Learning
- 8:55-10:10am Reading Workshop
- 10:10-10:30am Recess
- 10:30-11:25am Writing Workshop
- 11:25-11:40am Read Aloud
- 11:40-12:25pm Lunch
- 12:25-1:00pm ELD
- 1:00-2:00pm Math
- 2:00-2:10pm Recess
- 2:10-3:10pm Home Language
- 3:10-3:15pm Clean-up, Pack up and Dismissal

Student and Teacher Fall 2013 Survey Results
During the Fall of 2013, ASCEND students and teachers were surveyed to understand their perspectives about implementation of blended, personalize learning. Highlights from the ASCEND results are below.

The majority of ASCEND students agreed or strongly agreed with statements that working in small groups helps them understand the lesson better (61%) and working on the computer and online programs helps them stay more on task (61%) than when they are “with the whole class getting the lesson.”

Teachers on the other hand were more in favor of working in small groups with students. Teachers agreed or strongly agreed that small groups help students understand the lesson better (100%) and stay more on task (83%) than when they deliver instruction to the whole class.
Innovation

Based on strong results from Aspire’s Titan Academy in Los Angeles, ATCA will reimagine its whole instructional program, combining a blended learning classroom rotation model with technology-driven individualized learning and a focus on computer science. Technology-enabled strategies will be leveraged for teaching and learning concepts and content that are difficult to teach using traditional approaches. This will include bringing the emerging CODE Aspire program to the school. Through this program students from Kindergarten to 5th grade learn coding skills. This approach allows students to learn practical skills to work with technology while simultaneously providing them with a method to understand conventions, grammar, logic, precision, and other rules that make up technology literacy.

Goals

- Open a technology-focused school that increases personalized learning opportunities for students through individualized computer-based instruction and small group time with teachers.
- Implement the CODE Aspire program.
- Improve student academic achievement in English Language Arts.
- Improve student academic achievement in math.

Focus Areas for 2014/15

Over the next year, Aspire Technology Charter Academy will focus on the following areas to sustain and increase the effectiveness of blended, personalized learning.

1. Hire a blended learning teaching assistant to support all classroom technology, build tech resiliency, teach younger students about technology and disseminate data.
2. Hire a tech specialist to teach coding to students and teachers as well as oversee cross-curricular coding projects.
3. Identify the best devices to support selected digital content.
4. Train all teachers on the Aspire Instructional Guidelines and blended, personalized learning. Ensure that all teachers can meet required blended learning criteria for rollout.
School Background
Aspire Technology Charter Academy (ATCA) will be a K-5 grade school in Oakland that is part of Aspire Public Schools. Aspire opened Aspire Millsmont Academy in 2004 with the vision that every student is prepared to earn a college degree. To further this vision, Aspire closed Aspire Millsmont and is opening the technology-focused ATCA in 2014 to catalyze change and achievement for their students. By ensuring students become voracious, self-motivated, competent and lifelong learners, ATCA will prepare them not only for college but also for the 21st Century world.

This year, with Blended Learning, teachers are able to pull all students every day which is six groups each day. Because the teachers meet with every student every day, they have a deeper, more holistic understanding of students’ reading ability.
Liz Arney, Director of Innovative Learning, Aspire Public Schools

Model Design
Aspire Technology Charter Academy will use an in-class rotation model in Kindergarten to 5th grade classes with students working individually and in small-groups with teachers. Students will spend a minimum of 30 minutes working on English Language Arts software and 30 minutes working on math software per day. Additional independent reading time will be supported by the MyON Reader online reading program. On a weekly basis, students will receive instruction on coding, which will increase over the course of the school year.

<table>
<thead>
<tr>
<th>“Job to Be Done”</th>
<th>Tools or Program</th>
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<tbody>
<tr>
<td>Attendance, GPA, Suspension, Behavior</td>
<td>PowerSchool, OnCourse</td>
</tr>
<tr>
<td>Assessments/Benchmarks</td>
<td>Internal Aspire Benchmarks, Edusoft</td>
</tr>
<tr>
<td>State Data</td>
<td>CSTs, SBAC</td>
</tr>
<tr>
<td>Digital Content</td>
<td>DreamBox, iReady, Accelerated Reader</td>
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<td>Account Management</td>
<td>Active Directory, PowerSchool, Clever</td>
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<tr>
<td>Teacher Effectiveness</td>
<td>Bloomboard, PanoramaEd</td>
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“Job to Be Done”

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<thead>
<tr>
<th>Computer/Online vs. Whole Class: Staying on Task</th>
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<tbody>
<tr>
<td>Disagree/Strongly Disagree</td>
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<td>Strongly Agree/Agree</td>
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<tr>
<th>Small Groups vs. Whole Class: Understanding the Lesson</th>
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<tbody>
<tr>
<td>Disagree/Strongly Disagree</td>
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<tr>
<td>Strongly Agree/Agree</td>
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</table>

Student and Teacher Fall 2013 Survey Results
During the Fall of 2013, Aspire Millsmont students and teachers were surveyed to understand their perspectives about implementation of blended, personalize learning. Highlights from Aspire Millsmont results are below.

The majority of Aspire Millsmont students agreed or strongly agreed with statements that both working in small groups (75%) and the use of computer and online programs (73%) helps them understand the lesson better than when they are “with the whole class getting the lesson.” Similarly, results were close for the use of computer and online programs (72%) as well as small groups (70%) to help them stay more on task than when they are “with the whole class getting the lesson.”

Small Groups vs. Whole Class: Understanding the Lesson

Teachers on the other hand were more in favor of working in small groups with students. Teachers agreed or strongly agreed that small groups help students understand the lesson better (100%) and stay more on task (88%) than when they deliver instruction to the whole class.

Hardware
- Infrastructure to support in-class rotations across K-5

Sample Student Schedule
- 30 minutes per day of adaptive online content in both Math and Reading. Weekly instruction on coding.
Innovation
Integrating blended, personalized learning into Bret Harte classrooms has resulted in increased student morale and engagement, particularly for underperforming students. Students are excited about interacting with technology, accessing material at their individual level, experiencing more personal attention from teachers, receiving instant feedback from digital content and taking ownership of their education. Formative and summative data confirm that students are achieving internal and external success, and increasing their self-esteem. These factors, coupled with increased differentiated instruction, has reinforced the fact that blended personalized learning is the right strategy for Bret Harte. Students academic needs are better met with digital content and rotation models that allow teachers to facilitate learning in small groups.

Goals
- Continue to increase student academic success and engagement.
- Develop strategies to align blended, personalized instruction, digital content and the Common Core Standards.

Focus Areas for 2014/15
Over the next year, Bret Harte will focus on the following areas to sustain and increase the effectiveness of blended, personalized learning.
1. Seek digital content that aligns with the Common Core Standards and provides access to actionable data for teachers and students.
2. Secure additional devices to allow 1:1 access for students and support greater flexibility for teachers in lesson design.
3. Develop a new structure to provide technical support to teachers on devices and digital content.
School Background

Bret Harte Middle School is located in the Dimond/Laurel neighborhood. Students come from a large geographic area, making the student population one of the most ethnically and economically diverse middle schools in Oakland. Bret Harte’s diverse community embraces mutual respect, hard work and resilience to nurture the whole child in pursuit of academic excellence during the transition to young adulthood.

Model Design

Bret Harte began its implementation through their Math Department. Four teachers each are 2:1 on chromebooks using tools such as Khan Academy, Google Drive, Socrative and Manga High. Teachers are able to run two- and three-group in-class rotations, or as needed, go 2:1 and pull fully-targeted small groups. While beginning to leverage the power of adaptive online content in math classes, the teachers are also deploying OUSD-developed Common Core mathematics curriculum in small groups. Teachers have access to Khan’s data reports to inform grouping. The Bret Harte plan currently calls for expansion to English Language Arts classes in Fall 2014, and one ELA teacher is currently “piloting the pilot”—experimenting with different digital tools and devices in the ELA classroom to bring lessons learned to her colleagues this Spring and Summer.

“Job to Be Done”

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<tr>
<td>Attendance, GPA, Behavior</td>
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<tr>
<td>Grades and Assessments</td>
<td>ARO Universal Screener and Scholastic Reading Inventory</td>
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<td>State Data</td>
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<td>OUSD Benchmarks</td>
<td>Edusoft</td>
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<tr>
<td>Digital Content</td>
<td>Khan Academy, Google Drive, Manga High</td>
</tr>
<tr>
<td>Account Management</td>
<td>“Log-in with Google” and Clever</td>
</tr>
</tbody>
</table>

Hardware

- Win 7 Pro PC computer lab
- Additional wireless access points
- 135 Chromebooks
- Legacy iMac lab

Sample Student Schedule

- 8:30-9:25am Period 1
- 9:30-10:25am Period 2
- 10:30-11:25am Period 3
- 11:30-12:25pm Period 4
- 12:30-1:30pm Lunch
- 1:05-2:00pm Period 5
- 2:05-3:00pm Period 6

Student and Teacher Fall 2013 Survey Results

During the Fall of 2013, Bret Harte students and teachers were surveyed to understand their perspectives about implementation of blended, personalize learning. Highlights from the Bret Harte results are below.

Small Group vs. Whole Class: Understanding the Lesson

Over half (59%) of Bret Harte students agreed or strongly agreed with the statement that “working in a small group with my teacher helps me understand the lesson better than when I am with the whole class getting the lesson.”

Surveyed teachers expressed the same sentiment. They agreed or strongly agreed with statements about how working in small groups helps students understand the lesson better (80%) and stay more on task (90%) than when they “deliver instruction to the whole class.”
Innovation

The first year of implementation has yielded promising successes—increases in student engagement, differentiation, motivation, and 21st century preparedness in addition to gains in student lexile and rubric scores. Bended learning is also helping Brewer transition to the new Common Core State Standards. Teachers are leveraging small-group instruction to help struggling readers engage directly with complex texts, cross-departmental collaboration using MyAccess and Google Docs to teach argumentative writing. In reflection, Brewer has already identified valuable lessons that will shape how they move ahead. These lessons include: ensure students are thoroughly prepared to learn and understand new programs/tools; use software to teach and assess students’ learning as well as promote creativity; refrain from using technology as a “reward/free time;” provide extended independent time to allow students to acclimate to a new program or project as well as troubleshoot independently; balance time on computers with “pencil and paper” time; capitalize on instant feedback to motivate students to push themselves and become more self-directed; and lastly, continue to be patient and flexible with incorporating technology into daily instruction.

Goals

- Improve lexile and rubric scores for targeted students.
- Decrease the number of referral rates by non-1st year teachers for targeted students.
- Increase comfortability with rotational model and software for students and teachers.
- Increase a “Growth Mindset” (i.e. intelligence is not static) for students.

Focus Areas for 2014/15

Over the next year, Edna Brewer will focus on the following areas to sustain and increase the effectiveness of blended, personalized learning.

1. Increase connectivity and bandwidth for daily success.
3. Design and plan classroom space more strategically to support blended learning configurations.
4. Use additional staffing support more effectively and meaningfully to address student needs and the structure of blended, personalized lessons.
5. Improve consistency in classroom management/school-wide discipline.
School Background
Edna Brewer is a 6th to 8th grade middle school supported by a learning community of staff, parents and students with shared goals. With a vision to prepare every Brewer student for academic success, the administration works to create and maintain an engaging, safe and meaningful place for learning and individual growth. Decision making for staff and administration is driven by meaningful student data and information.

"We are unanimous that Blended Learning is the right path for our school. The increases in student engagement, differentiation, motivation, and 21st century preparedness are concrete and coincide with our values and vision . . . and are confident that our continued use of Blended Learning will greatly increase both teacher and student effectiveness and satisfaction.”
Sam Pasarow, Principal

Model Design
Edna Brewer began its implementation through their English Language Arts department. Six teachers are each 1:1 on chromebooks using tools such as Google Drive, Achieve 3000, MyAccess Writing and Typing Club. Teachers are able to run two- and three- group in-class rotations, or as needed, go fully 1:1 and pull fully-targeted small groups. Teachers have access to data reports from Achieve3000 and MyAccess Writing to inform grouping. The Brewer plan currently calls for expansion to Social Studies classes in Fall 2014. Teachers are already experimenting with how these new tools can boost engagement and performance across the disciplines.

"Job to Be Done" Tools or Program
Attendance, GPA, Suspension, Behavior AERIES SIS, EverFi's Ignition
Grades and Assessments TeacherEase, Schoology, Scholastic Reading Inventory
State Data CMA (by strand), CST (3 years longitudinal), CELDT, SBAC
OUUSD Benchmarks Edusoft
Digital Content Achieve3000, MyAccess Writing, Typing Club, Google Drive
Account Management “Log-in with Google” and Clever

Hardware
- 180 Chrombooks
- Additional wireless access points
- Legacy computer labs and laptop carts

Sample Student Schedule
- 8:30-10:05am Block 1
- 10:05-10:13am Break
- 10:18-11:55am Block 2
- 11:55-12:35pm Lunch
- 12:40-1:05pm SSR
- 1:10-2:45pm Block 3
- 2:50-3:45pm 7th Period

Student and Teacher Fall 2013 Survey Results
During the Fall of 2013, Brewer students and teachers were surveyed to understand their perspectives about implementation of blended, personalized learning. Highlights from the Brewer results are below.

The majority of Brewer students agreed or strongly agreed with statements that working with the computer and online programs helps them understand the lesson better (62%) and stay more on task (62%) than when they are “with the whole class getting the lesson.”

Interestingly, surveyed teacher responses directly reflect the viewpoint of students. Teachers agreed or strongly agreed that computer and online programs help them understand the lesson better (80%) and stay more on task (60%) than when they deliver instruction to the whole class. This alignment of viewpoints suggests the Brewer is finding a sweet spot for blended, personalized learning.
Innovation

Through a School Improvement Grant, ECP extended their school day, but rather than simply tacking on an after-school program, they redesigned their entire day to include several rotational intervention periods—AIM (Aspire, Invest, Make the Grade) and RiseUp (skills-based acceleration courses). ECP leverages a partnership with Citizen Schools to support homework and provide enrichment. Incorporating blended learning allows ECP to raise the rigor of AIM and provide for more individualized attention to students. In Year 2, ECP implemented a 1:1 model across just 8th grade, shifting their focus to fewer students and teachers to ensure a stronger user experience. Teachers and students honed their skill in data aggregation and analysis to improve the quantity and quality of data-based instructional decision-making and short-cycle innovation.

Goals

- Increase in overall student learning performance and satisfaction.
- Increase teacher and school administration effectiveness and satisfaction.
- Increase parent/caregiver awareness and learning advocacy.
- Reduce student referrals and improve school culture through meeting students’ individual needs as learners.

Focus Areas for 2014/15

Over the next year, ECP will focus on the following areas to sustain and increase the effectiveness of blended, personalized learning.

1. Explore the possibility to bring a part-time technology teacher on board to lead lab-style online classes, provide online technical support, and support the growth of instructional capacity of teachers focused on blended, personalized learning.
2. Continue to encourage and support teachers to use data from digital content to provide personalized experiences for students.
3. Consider how blended personalized learning will be incorporated into ECP’s Extended Learning Time model.
4. Investigate additional digital content, including premium options.
5. Assess resources and best timing to bring professional development opportunities to teachers to deepen implementation of blended personalized learning.
6. Consider levels of technical ability and pedagogical openness in hiring criteria for new teachers.

Theory of Change with Blended Learning Implementation:

Elmhurst Community Prep (ECP) believes that blended, personalized learning will help improve student outcomes by increasing the use of fine-grained data in planning the sequencing of lessons, increasing the use of small-group instruction and reducing the amount of time students spend with instruction that is neither personalized, nor aligned with their instructional needs. In Year 2, ECP implemented a 1:1 model across just 8th grade, shifting their focus to fewer students and teachers to ensure a stronger user experience. Teachers and students honed their skill in data aggregation and analysis to improve the quantity and quality of data-based instructional decision-making and short-cycle innovation.
School Background
In 2002 Elmhurst Community Prep was ranked as the lowest performing middle school in OUSD, had 17 teacher vacancies, and had neglected school grounds. In 2006, the school was reconstituted into two small schools and the school has transformed into an orderly, safe school focused on student learning. Over the past two years the performance of African American students outperformed both District and State averages.

“While we did not anticipate this in our planning, it could also be said that students will be referred to the office less and behave more appropriately more often when teaching and learning is meeting their needs as learners. To the extent that this has happened in our 8th grade classrooms, I believe we can attribute some of the improvements in student culture to the blended learning work.”

Kilian Betlach, Principal

Model Design
Elmhurst Community Prep is moving to a one-to-one model with enough devices for all students in a classroom. Beginning teachers are able to use whole group instruction with devices to teach students (who are also new to blended) how to be self-directed online. As students and teachers increase their confidence and skills using the new tools teachers move toward a more “flex model” where students are pulled for small group instruction based on student assessment data. Online content will be prioritized that aligns with the Common Core State Standards and includes critical thinking and higher order skills. Generally speaking, while ECP has an extended school day, students continue to go through a traditional bell schedule of different core subjects.

<table>
<thead>
<tr>
<th>“Job to Be Done”</th>
<th>Tools or Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance, GPA, Suspension, Behavior</td>
<td>AERIES SIS and EverFi’s Ignition</td>
</tr>
<tr>
<td>Grades and Assessments</td>
<td>Engrade, Exit Ticket and Scholastic Reading Inventory</td>
</tr>
<tr>
<td>State Data</td>
<td>CMA (by strand), CST (3 years longitudinal), CELDT, SBAC</td>
</tr>
<tr>
<td>OUSD Benchmarks</td>
<td>Edusoft</td>
</tr>
<tr>
<td>Digital Content</td>
<td>Accelerated Reader, Achieve3000 and Khan Academy</td>
</tr>
<tr>
<td>Account Management</td>
<td>“Log-in with Google” and Clever</td>
</tr>
</tbody>
</table>

Student and Teacher Survey Results
Survey results from Spring 2014 will be provided in early June.

Hardware
- 6 pilot classrooms
- Chromebooks and some legacy desktops
- Upgraded wireless access points

Sample Student Schedule
- 8-12am Core classes
- 12-12:30pm RiseUp
- 12:30-1pm Lunch
- 1-2pm Advisory
- 2-3pm AIM
- 3-5pm Apprenticeships
By the Numbers
- Principal: Minh-Tram Nguyen
- 292 Students: 20 Staff
- 2011 API Score: 750
- 88% Free or reduced lunch
- 67% ELL

Theory of Change with Blended Learning Implementation:
Minh-Tram has watched the time and struggle that goes into differentiation and believes technology will build capacity and save time. EnCompass teachers will be better able to make learning decisions about lesson planning, student grouping, curriculum advancement and online learning programs. Individual students will receive response to intervention when Junyo-enabled blended learning system indicates students are falling behind or advancing. EnCompass parents/caregivers will become better advocates for their child’s learning, enabled with the knowledge of their individual child’s learning performance. EnCompass leadership will be better able to support their teachers with the knowledge gained from frequent student learning measures & class roster performance visualizations, sourced on a regular basis rather than three times a year.

Innovation
EnCompass is using blended learning to creatively leverage adult time to better maximize expertise and student-teacher ratios despite decreasing budgets.

Detailed Pilot Objectives (specific measurement evidence and tools available upon request)
1. Increase teacher awareness of formative learning data and use instructional decision-making
2. Increase student awareness of learning performance
3. Increase student achievement
4. Increase student and teacher satisfaction
5. Maintain student-teacher ratio while increasing teacher-student attention & interaction
6. Successfully source data from multiple online learning providers within single user interfaces (teacher & student dashboards)
7. Increase use of data in leadership decision-making
8. Increased parent/guardian monitoring and awareness of their child’s learning performance

Assessments
EnCompass will use Junyo assessment builder to inform classroom instruction and personal learning. The Junyo math learning map (KSAs) will be used to plan for and drive instruction for Math. (ELA learning map will be rolled-out in 2013.) The following assessments will be used in 2012:
- DIBELS NEXT
- Scholastic Reading Inventory (SRI) lexiles
- OUSD Standards-based benchmarks
- OUSD new common core assessments
- Junyo Math Learning Map
- Junyo formative assessments
- I-Ready and Achieve3000 data
School Background
Opened in 2004, EnCompass focuses on the development of the whole child (mind, body, emotions and spirit). EnCompass actively monitors student progress through data analysis and a strong RTI program. It uses transformed and equity-focused lens in student enrichment, family engagement and coordination of programs and services.

“I’ve watched even the best teachers struggle to find the time and resources to differentiate effectively.”
Minh-Tram Nguyen

Model Design
EnCompass will pilot both in-classroom rotations (K-5th grades) and “mini labs” (4th-5th grades) in addition to possibly departmentalizing ELA, Math and science in 4th-5th grades. During year 1, EnCompass will implement blended learning methodologies for a weekly minimum of 120 minutes (30 min x 4 days) in Math and ELA in grades 1-5. EnCompass will pilot a three-group rotation with student-to-student, student-to-teacher and student-to-computer groups.

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Typical</th>
<th>New—Option 1</th>
<th>New—Option 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2-4th grade classrooms</td>
<td>3-4th/5th grade classrooms</td>
<td>3-4th/5th grade self-contained classrooms</td>
</tr>
<tr>
<td></td>
<td>2-5th grade classrooms</td>
<td>Students in leveled groups</td>
<td>Students in leveled groups</td>
</tr>
<tr>
<td></td>
<td>120 mins ELA instruction in a combination of whole group and small leveled groups</td>
<td>Teachers departmentalize: ELA, Math, Science, Social Studies</td>
<td>5 TSA—teacher coaching, intervention</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4th grade 1 Teacher/20-25 students 5th grade 1 Teacher/20-25 students</td>
<td>Group 1 21 students Group 2 21 students</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4th grade 1 Teacher/20-25 students 5th grade 1 Teacher/20-25 students</td>
<td>Group 3 21 students 1 Lab Assistant 21 students</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ELA 1 Teacher/28 students Math 1 Teacher/28 students</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Science 1 Teacher/28 students</td>
<td></td>
</tr>
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<td></td>
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</tbody>
</table>

Dashboard Integration
In the first year, the following data will be integrated into teacher dashboards:

<table>
<thead>
<tr>
<th>Type of Data</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance, GPA, suspension, behavior</td>
<td>AERIES SIS</td>
</tr>
<tr>
<td>Class grades</td>
<td>Engrade, after school participation, Tier 2-3 interventions, counseling support</td>
</tr>
<tr>
<td>State Data</td>
<td>CMA (by strand), CST (3 years longitudinal), CELDT</td>
</tr>
<tr>
<td>OUSD Benchmarks</td>
<td>Edusoft</td>
</tr>
<tr>
<td>Digital Content</td>
<td>iReady, Achieve3000, ST Math</td>
</tr>
</tbody>
</table>

Schedule for Sample Pilot Classrooms 4th-5th grades

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30-8:50am</td>
<td>Morning Meeting/Advisory</td>
</tr>
<tr>
<td>8:50-10:50am (120 mins)</td>
<td>ELA: Teacher 1: 21 students, 30 min BL reading rotation Teacher 2: 21 students, 30 min BL reading rotation Teacher 3: 21 students, 30 min BL reading rotation Lab Assistant: 21 students in blended learning lab</td>
</tr>
<tr>
<td>10:50-11:20am</td>
<td>Math facts/Blended learning</td>
</tr>
<tr>
<td>11:20-11:35am</td>
<td>Fitness</td>
</tr>
<tr>
<td>11:35-12:15pm (90 mins)</td>
<td>Lunch</td>
</tr>
<tr>
<td>12:15-1:15pm</td>
<td>Math: Teacher 1: 21 students, 30 min BL reading rotation Teacher 2: 21 students, 30 min BL reading rotation Teacher 3: 21 students, 30 min BL reading rotation Lab Assistant: 21 students in blended learning lab</td>
</tr>
<tr>
<td>1:15-1:45pm</td>
<td>ELA/AED challenge</td>
</tr>
<tr>
<td>1:45-2:30pm</td>
<td>Science and literacy</td>
</tr>
<tr>
<td>2:30-2:55pm</td>
<td>Writing</td>
</tr>
<tr>
<td>2:55-3:25pm</td>
<td>Tier 1, 2, 3 ELA RTI Block</td>
</tr>
</tbody>
</table>
Blended Learning Pilot

Korematu Discovery Academy
Grades PreK - 5

By the Numbers

- Principal: Rosemary McAtee
- Total Student Enrollment: ~425
- # of students with regular access to blended learning instruction: ~250
- 2013 Growth API Score: 743
- 97% Free or reduced lunch
- 50% English Language Learners

Theory of Change

Blended Learning allows Korematu Discovery Academy to focus on the needs of individual students, supporting them to become independent learners and thinkers. Data available from digital content allows teachers to quickly assess what students are learning and how well they are learning. In this coming year, Korematu will be focusing on leveraging blended, personalized learning instruction and teacher led small groups to support student achievement in social studies, science and writing through access to leveled reading materials and digital content.

Innovation

Korematu started small and deep in 2012-13, by completely redesigning one grade level as a Blended Learning model for the school. Central to Korematu’s Blended Learning philosophy is striking the proper balance between critical thinking and skill-building activities in the classroom. Korematu intends to use digital content to facilitate the latter, giving pilot teachers the freedom to focus on the former. In 2013-14, Korematu grew its implementation up to 5th grade and down to 2nd and 3rd grades. Teachers use an array of digital content providers as they continue to learn about matching different tools with different students. The new principal, Ms. McAtee, and Korematu staff have long been proponents of Fast ForWord, an online program that helps build student memory and phonological awareness, and Accelerated Reader, a reading program that helps build vocabulary and reading comprehension skills.

Goals

- Increase academic gains through the adoption of blended, personalized learning best practices and digital content in select classrooms.
- Leverage blended, personalized learning to support the transition to the new Common Core Standards and Korematu’s reading intervention strategy.
- Develop a blended, personalized learning implementation model other OUSD schools can use to integrate blended, personalized learning best practices into their pedagogical approaches.

Focus Areas for 2014/15

Over the next year, Korematu will focus on the following areas to sustain and increase the effectiveness of blended, personalized learning.

1. Provide professional development to teachers on technology and digital data analysis.
2. Train the current lab manager on digital content so students and teachers can be provided with immediate support.
3. Secure additional funding to provide a classroom set of Chromebooks to each second grade classroom.
**School Background**

Korematsu attributes much of the school's student achievement growth to the implementation of two online learning programs as part of their effort to individualize student learning and accelerate reading levels, primarily during after school intervention. The two programs, Fast ForWord and Reading Assistant, are published by Scientific Learning, and OUSD has recently purchased Fast ForWord districtwide licenses due in large part to the success at Korematsu.

Korematsu was recently nominated for one of the nation's highest K-12 honors: the National Blue Ribbon Schools award and they were the top performing elementary schools in Achieve3000 for the 2012/13 school year.

“Our students are now motivated to learn and be creative; blended learning has brought more time for teachers to plan and work with individual student needs.”

Rosemary McAtee, Principal

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**Model Design**

Korematsu began Year 1 with in-classroom two group rotation with 1/2 of students on computers and 1/2 of students with the teacher. In year 2, classrooms have access to 1:1 devices for part or all of the school day. Students on computers use personalized, adaptive digital content primarily to reinforce concepts learned with the teacher, though at times they will receive direct instruction online. Students with the teacher receive differentiated small-group instruction, while others collaborate with peers on project-based group work.

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**“Job to Be Done”**

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<td>OUSD Benchmarks</td>
<td>Edusoft</td>
</tr>
<tr>
<td>Digital Content</td>
<td>Achieve3000, Mangahigh, Reading Assistant, FastForWord, Accelerated Reader, Google Drive</td>
</tr>
<tr>
<td>Account Management</td>
<td>“Log-in with Google,” Clever</td>
</tr>
</tbody>
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**Student and Teacher Fall 2013 Survey Results**

During the Fall of 2013, Korematsu students and teachers were surveyed to understand their perspectives about implementation of blended, personalize learning. Highlights from the Korematsu results are below.

**Small Group vs. Whole Class: Understanding the Lesson**

- Over half (64%) of Korematsu students agreed or strongly agreed with the statement that “working in a small group with my teacher helps me understand the lesson better than when I am with the whole class getting the lesson.”

**Small Group vs. Whole Class: Staying on Task**

- Surveyed teachers expressed the same sentiment. They agreed or strongly agreed with statements about how working in small groups helps students understand the lesson better (78%) and stay more on task (88%) than when they “deliver instruction to the whole class.”

---

**Hardware**

- In class 1:1 ratio
- 40 MacBook Airs
- 108 Chromebooks and counting

**Sample Student Schedule**

- **8:40-9:35am MF/ST**
- **9:35-10:10am Math**
- **10:10-10:45am Skills/RA**
- **10:45-11:20am Writing**
- **11:20-12:05pm Lunch**
- **12:05-12:45pm ELD/AED**
- **12:45-1:15pm Vocab/GL Text**
- **1:15-1:50pm RTI**
- **1:50-2:00 Recess**
- **2:00-2:55pm Social Science**
Innovation
Madison Park Academy started the Blended Learning Pilot in 2012-13, by completely redesigning middle school mathematics classes, along with 7th and 8th grade Social Studies and 8th grade Science. Central to Madison's Blended Learning philosophy is striking the proper balance between critical thinking and skill-building activities in the classroom. Madison intends to use digital content to facilitate the latter, giving pilot teachers the freedom to focus on the former. In 2013-14, Madison grew its implementation up to its new high school 9th grade and down to the Lower School. Teachers use an array of digital content providers as they continue to learn about matching different tools with different students. Over the past year of implementation, Madison learned a number of lessons that were critical to their success, including allowing teachers time to opt-in, providing time for teachers to experiment with software programs, developing a sustainability plan early, educating families about blended learning, and finally that meeting the needs of the most underperforming students can improve the culture and climate of the whole school.

Goal
- Increase academic gains through the continued use of blended, personalized learning best practices in middle school and spread these practices to high school classrooms.
- Leverage blended, personalized learning to support the transition to the new Common Core Standards.
- Develop a blended, personalized learning implementation model other OUSD schools can use to integrate blended, personalized learning best practices into their pedagogical approaches.

Focus Areas for 2014/15
Over the next year, Madison will focus on the following areas to sustain and increase the effectiveness of blended, personalized learning.
1. Identify additional resources to build, restore and repair damaged computers.
2. Expand the 1:1 take home computer program for students across the campus.
3. Seek digital content that aligns with the Common Core Standards and the Smarter Balanced Assessment.
4. Expand and deepen implementation of personalized learning across all subjects.
5. Secure additional resources (devices and digital content) to support new high school classrooms.
6. Provide professional development opportunities to teachers new to blended learning.
7. Encourage district partnerships with software distributors to reduce fiscal impact on schools.
School Background

Madison Park Academy was covered in graffiti and had an API of 528 seven years ago. Today, it is a welcoming campus with classroom walls covered in high quality student work and art, boasting an API of well over 700. The current principal, Dr. Lucinda Taylor, has taken every opportunity to provide her students with a 21st century education, but she’s not satisfied. Three years ago, Dr. Taylor applied for and received a “school-to-home” grant, providing laptops for every student and Smartboards, ELMOs and wireless Internet for every classroom. Madison has the only “new-comers” program in East Oakland, serving students who have recently arrived in America. In 2013, Madison became a high school, with their former 8th graders becoming the first 9th grade class.

“Blended Learning has provided a level of excitement in education that did not exist in urban education.”
Dr. Lucinda Taylor, Principal

Model Design

In the middle grades, Madison predominantly blends instruction in mathematics, along with some social studies and science classes, mainly with an in-class two group rotation, although many of these classrooms have access 1:1 devices as needed. The new high school is 1:1 across the core classes and students are issued their own device. Three lower school classrooms began blending in the Fall of 2013. Students on computers use personalized, adaptive digital content primarily to reinforce concepts learned with the teacher, though at times they will receive direct instruction online. Students with the teacher receive differentiated small-group instruction, while others collaborate with peers on project-based group work. Madison uses providers and tools including Google Drive, Jupiter Grades and Juno Ed, Khan Academy, Manga High and Mastery Connect. Teachers continue to improve their own practice in matching the right tool for the right job for the right student or group of students.

“Job to Be Done” | Tools or Program
--- | ---
Attendance, GPA, Behavior | AERIES SIS, EverFi’s Ignition, Common Sense Media’s Digital Passport
Grades and Assessments | MasteryConnect, Jupiter Grades, JunoEd, Scholastic Reading Inventory
State Data | CMA (by strand), CST (3 years longitudinal), CELDT, SBAC
OUSD Benchmarks | Edusoft
Digital Content | LearnZillion, Manga High, MasteryConnect, McGraw Hill ConnectEd, Khan Academy, IXL, Accelerated Reader
Account Management | “Log-in with Google” and Clever

Hardware

- ~300 HP netbooks (2010)
- ~100 Lenovo ThinkPads (2012)
- ~200 Chromebooks (2013)

Sample Student Schedule

- 90-minute block schedule in High School to allow for greater flexibility & personalization within each content area
- Classroom rotation-driven instruction at least three times per week in middle school
- Weekly blended learning-specific teacher common planning time and professional development

Student and Teacher Survey Results

Survey results from Spring 2014 will be provided in early June.
SRI Education researchers address complex issues in education, learning, and human services. Multidisciplinary teams of education policy researchers, sociologists, psychologists, political scientists, statisticians, and others study education policy issues and develop research-based solutions to improve productivity and quality of life at home and school and in the workplace.

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Executive Summary

Much in the same way technology is changing the way we work and interact in other aspects of our lives, technology will inevitably influence the way we approach teaching and learning. Blended learning describes the integration of technology—and online learning in particular—into classroom-based instruction. In 2012–13, the Rogers Family Foundation (RFF) and Oakland Unified School District (OUSD) launched a blended learning pilot program in four schools.

With support from RFF, OUSD, and other external assistance providers, the goal of the Oakland Blended Learning Pilot is to support teachers in instructing students in small groups, integrating digital content, and using data to inform differentiated teaching and learning. The first year of the pilot, involving four schools and 26 teachers, supported substantial experimentation as teachers worked toward increasing their comfort and sense of efficacy in each of these areas. The idea is that as teacher practice changes along these dimensions, students will experience more personalized learning and more engaging learning activities and have increased opportunities for self-direction and metacognition. These student experiences, in turn, are expected to increase student engagement and agency and ultimately academic achievement, while also increasing teachers’ professional satisfaction.

This report presents evaluation findings from the first year of the pilot. The purpose of the evaluation was twofold: (1) to support the pilot program by informing mid-course refinements and corrections, and (2) to provide information to the larger education community on the challenges and successes associated with implementing blended learning in a large urban school district. To inform the evaluation, the SRI team collected data through teacher surveys, classroom observations, school visits that included teacher and principal interviews and student focus groups, and additional interviews with key stakeholders. Because the pilot intended to support substantial experimentation in this first year, the evaluation was designed to examine early-stage implementation and does not assess the impact on student outcomes. Pilot sponsors report a commitment to examining student outcomes as the initiative matures in the next 2 years.
Key Findings

Technology infrastructure. Implementing blended learning requires, at the most basic level, ensuring Internet access, high-quality hardware, and access to digital content. For many schools and districts, establishing the basic infrastructure to support reliable Internet connectivity and sufficient bandwidth is no easy task. In OUSD, bringing school facilities into the 21st century is a work in progress.

- In two of the four pilot schools, the infrastructure was in place at the start of the school year and ongoing technology issues were minimal.
- At another school, the Internet and hardware worked, but the launch was delayed because the technology was put in place later; at this school, teacher satisfaction with tech support was mixed.
- In one school, technology challenges undermined the pilot effort.

Selection and use of digital content. Online programs offer a variety of instructional features in a range of formats, such as interactive game-based activities, instructional videos, nonfiction articles, and open-ended questions, among others. A critical step in establishing a blended-learning environment is teachers’ selection of digital content suitable to their classroom contexts and the strategic use of that digital content to meet classroom needs.

- Pilot teachers faced a variety of early and critical decisions when integrating digital content: which and how many programs and what role those programs would play in instruction. The decisions they faced about the role digital content would play in instruction included (1) assigning digital content or leveraging adaptive features of particular programs, (2) using digital content for remediation or introduction of new content, and (3) determining which students to target with which online programs.
- Over the course of the year, pilot teachers used a range of digital content for a variety of instructional purposes. Among the digital programs were Achieve 3000, i-Ready, Khan Academy, ST Math, and iLearn iPASS.
- Pilot teachers most often used online programs for remediation and practice; teachers tended not to use the computer-based programs to introduce new concepts, nor did they find the programs well suited to helping students develop higher-order thinking skills. Still, the majority of pilot teachers reported online programs to be of high quality overall.
- Pilot teachers faced a variety of challenges with integrating digital content. Two-thirds (67%) saw lack of time to learn the digital content as a barrier to using digital content, and more than half of all pilot teachers (58%) found lack of time to plan lessons to integrate digital
content to be a barrier. In addition to time constraints, nearly two-thirds of all pilot teachers (62%) identified insufficient professional development on using digital content as a barrier.

- Implementation of only a select few digital programs enabled teachers to develop a thorough understanding of the programs and use them strategically.

**Classroom management.** For the most part, the blended learning pilot supported the implementation of a “station-rotation model” in which students moved from stations in which they worked online to stations in which they worked directly with their teachers in small-group settings; in some cases, students also went to independent-work stations, off the computers.

- Introducing and managing a rotational model was challenging for many teachers.

- Teachers had the added challenge of supporting students so that they could be successful in a blended-learning classroom, including help with basic computer use and troubleshooting, as well as self-regulation necessary for independent learning.

- Facilitating small-group rotations and easing students into independent learning on the computers were more easily accomplished when teachers had help. In many classrooms where implementation went smoothly, a second adult was in the classroom.

- Even teachers who had a second adult in the classroom felt the need to establish new routines and systems to facilitate smoother implementation of blended learning.

- When teachers successfully implemented new strategies and students were comfortable with the procedures and routines, both on and off the computers, teachers were able to let students make more choices. However, giving students more independence came with its own set of management challenges.

**Using data, digital content, and small-group instruction to personalize teaching and learning.** Fully realizing a vision of personalized blended learning involves differentiating students’ learning experiences based on more, better, and faster data. Taking this step requires relatively easy access to meaningful data and strategies for providing students with tailored learning experiences, based on good information about what they need next.

- Teachers implementing blended learning had access to some combination of three kinds of digital data platforms: individual platforms from each online program; a “data dashboard” that integrated across programs; and assessment platforms that enabled teachers to create, score, and analyze their own assessments.

- Digital content providers offer tools to facilitate interpretation and use of data, but few teachers have become comfortable using these tools regularly to inform instructional decisions.
• Pilot teachers seek rapidly interpretable snapshots of student progress toward content standards; some also emphasize information to help monitor students’ on-task behavior.

• While conceptions of differentiated instruction varied, the two most common forms of differentiation among pilot teachers were the use of small-group instruction by performance level and the use of adaptive computer programs for individualized learning experiences.

• Some teachers strategically employed a variety of online programs based on perceptions of fit between program and student performance level.

• Teachers who regularly used data to differentiate instruction often leveraged strategies that support students to monitor their own learning through real-time feedback and progress tracking.

• A few pilot teachers reported enabling higher-performing students to work on different content once they had mastered current standards.

Perceived student benefits and teacher satisfaction. Any intervention in schools ultimately aims to improve academic achievement for students, including Oakland’s Blended Learning Pilot. However, because this was the first year of a pilot that encouraged substantial experimentation, coupled with the small sample size (i.e., four schools) and lack of a well-matched comparison group, SRI did not analyze student test scores. Instead, the evaluation examined teachers’ and students’ perceptions of the academic and nonacademic outcomes associated with blended learning, as well as teacher satisfaction with the pilot.

• Teachers’ perceptions of the extent to which blended learning has helped increase student learning are mixed. Nearly two-thirds (61%) of pilot teachers agreed that students’ learning and understanding of material had improved due to the increased use of small-group instruction, whereas fewer than half of all pilot teachers (43%) agreed that students’ learning improved due to the use of digital content. Interestingly, fewer than one in four pilot teachers (22%) agreed that their students performed better on benchmark assessments since blended learning was introduced in their classrooms.

• Most pilot teachers reported that using digital content increased both student engagement (91% agreed that students were highly engaged by the online programs) and student agency (70% agreed that the digital content helped students take ownership for their own learning).

• Blended learning increased students’ comfort with technology and created some opportunities for collaboration.

• Teacher satisfaction with blended learning varied. Overall, most teachers who participated in the pilot in 2012–13 would recommend blended learning to others (70%), thought that blended learning met the needs of their students (65%), and were eager to continue with the blended learning pilot program again in 2013–14 (79%).
Lessons Learned

As technology increasingly influences—and ideally enhances—teaching and learning in K–12 classrooms, the field must consider how best to support teachers and schools in making this transition. We know from decades of reform efforts that there are no silver bullets: it is very difficult for any education reform to meaningfully change teaching and learning (Tyack and Cuban, 1995). To ensure that blended learning becomes a strategy for supporting effective instruction and increasing student agency, rather than a replacement of paper assignments with digital worksheets, program developers and educators must be intentional about the role and purpose of online learning, leveraging the best of what it has to offer and adapting as the technology changes. Although current efforts to implement blended learning are in the early stages, lessons from the experiences of the pioneers may help others as they engage in this important work.

Given the wide range of teachers’ comfort with technology and experience with the instructional strategies consistent with blended learning, adopting blended learning is more of a leap for some teachers than for others. As such, one lesson may be that it makes sense to begin any rollout with the more eager, early-adopter teachers and bring along the more hesitant teachers when others have already worked through some of the inevitable challenges and have positive experiences—perhaps even implementation models—to share. It may also be beneficial to focus implementation and the associated support by choosing to work initially in just one content area or at one school level (i.e., middle or elementary).

Once schools and teachers are recruited, the first step to transitioning to a blended-learning model is to acquire the necessary technology infrastructure. This piece should not be underestimated. Next, teachers will need ample time and support to become acquainted with the digital content and determine its purpose in their classroom contexts. As Oakland pilot teachers learned, less is more: committing to a few carefully selected programs allows teachers to gain a more thorough understanding of those programs and to implement them more strategically. Teachers and their support providers also need to plan for classroom routines and systems that support integration of digital content. In Oakland, while teachers’ success with implementation of small groups, student-directed learning, and systems around digital content use varied, pilot teachers rarely had the opportunity to collaborate and observe other pilot teachers’ classrooms. Schools, districts, and others interested in implementing blended learning should consider providing teachers with well-structured opportunities to collaborate with and observe other teachers’ classrooms and to share best practices for creating effective systems around the use of online instruction. Schools and teachers will also benefit from implementation models that have been field-tested with a variety of learners.
Using data to inform instruction is another important aspect of the blended-learning model. Among pilot teachers, data from digital content programs were largely underutilized, and the pilot teachers who regularly incorporated data into their practice typically used student results to inform groupings without significantly tailoring instruction within those groupings. Thus, another lesson is that teachers not only need to understand how to access and interpret data, they also must understand how to translate those data into targeted, differentiated teaching strategies that meet their students’ specific needs and abilities.

In sum, implementing personalized blended learning requires the coordination of many essential components: updated technological infrastructure, carefully selected online learning programs, new classroom routines that help students take responsibility for their own learning, robust data systems, and instruction that is tailored to meet the needs of a diverse student population. Over the course of the first year of this pilot, educators in Oakland made progress on all these fronts. Moreover, the pilot’s ongoing emphasis on innovative and effective instruction, increased student agency, and the deliberate integration of facilitative technology holds promise for the future.
Introduction

Much in the same way technology is changing the way we work and interact in other aspects of our lives, technology will inevitably influence the way we approach teaching and learning. Blended learning describes the integration of technology—and online learning in particular—into classroom-based instruction.¹ In fall 2011, the Rogers Family Foundation (RFF) and Oakland Unified School District (OUSD) school leaders began to plan a blended learning pilot program that launched in four schools in 2012–13. More specifically, the Oakland Blended Learning Pilot aims to support teachers in changing their instructional practice through the introduction of online learning in the classroom with an emphasis on small-group rotations. In the blended-learning lexicon, this model is referred to as the “station-rotation model” (Staker and Horn, 2012).

With support from RFF, OUSD, and other external assistance providers, the goal of the pilot is to support teachers in instructing students in small groups, integrating digital content, and using data to inform differentiated teaching and learning (Exhibit 1). The first year of the pilot supported substantial experimentation as teachers worked toward increasing their comfort and sense of efficacy in each of these areas. The idea is that as teacher practice changes along these dimensions, students will experience more personalized learning and more engaging learning activities and have increased opportunities for self-direction and metacognition. These student experiences, in turn, are expected to increase student engagement and agency and ultimately academic achievement, while also increasing teachers’ professional satisfaction.

This report presents evaluation findings from the first year of the pilot. As a report on the first year of a complex and dynamic pilot effort, it is a snapshot in time; pilot schools and support providers are working to strengthen implementation and much continues to change. The goal is to provide actionable information to stakeholders in Oakland and more general lessons to the larger education community on the challenges and successes associated with implementing blended learning in a large urban school district.

¹ To encourage the use of shared language as educators and researchers implement and study blended learning, Staker and Horn (2012) have offered the following definition: “Blended learning is a formal education program in which a student learns at least in part through online delivery of content and instruction with some element of student control over time, place, path, and/or pace and at least in part at a supervised brick-and-mortar location away from home.”
Context for the Pilot

While much of the experimentation with—and research on—blended learning is occurring in charter schools (see Bernatek, Cohen, Hanlon, and Wilka, 2012), the context for this pilot is a large urban school district. The contextual factors that may be relevant to this intervention include

- OUSD’s long history of complex governance structures and management challenges;
- leadership committed to innovation and improved outcomes for young people;
- communities that are affected by crime, drug abuse, and gang activity where social capital is uneven;
- pockets of excellence as well as ongoing challenges in attracting, supporting, and retaining effective educators;
- declining student enrollment and significant fiscal constraints;
- new curriculum adoptions;
- other initiatives aimed at boosting student learning; and
- a changing teacher evaluation system.
Moreover, OUSD and its schools operate in a federal and state policy context that includes academic standards for students and high-stakes assessment and accountability systems, all of which are in the midst of a transition to the Common Core State Standards (CCSS).

The pilot included four schools, two elementary and two middle, located in the high-poverty, high-crime area of East Oakland. The schools applied to be part of the pilot, and RFF selected them on the basis of their strong leadership, good instructional foundation, positive learning culture, and data-driven teaching strategies. All four schools had seen sustained positive growth in their API scores, averaging a 109.5-point increase in 5 years (2007–11), compared with the 68-point growth that OUSD averaged over the same 5 years.

Even though the OUSD Blended Learning Pilot started small, it was quite ambitious and required support from a variety of players. At the outset, RFF and OUSD established a Blended Learning Coordinating Committee that brought together stakeholders from many different areas and met every 2 weeks until December 2012; from that point on, it met every 6 weeks. In addition, each school established its own planning committee, and school leaders committed to support their pilot teachers by providing initial planning time, designating ongoing professional development time for the work, and prioritizing the pilot. RFF provided support through its Director of Blended Learning and two blended-learning specialists. These three people provided whatever support was needed of them, including not limited to technical, instructional, and moral support. OUSD dedicated a project manager to coordinate the district’s involvement and provided up-front support by setting up the infrastructure necessary to implement a blended-learning classroom, including increasing bandwidth, adding wireless access points, and providing student information and assessment information to support increased use of data.

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2 This committee included representatives from OUSD’s departments of Leadership, Curriculum & Instruction; Information Technology; and Research, Assessment & Data; as well as RFF leadership and school leaders.
Structure of the Pilot

Ultimately, RFF intended for the pilot to support whole schools in making the transition to blended learning. However, in the first year, schools had substantial latitude in developing their plans, and the scope of implementation varied significantly from site to site (Exhibit 2). In addition, the support schools received to launch the pilot differed considerably.

Technical assistance providers. RFF brokered introductions to two technical assistance (TA) providers. The technical assistance providers were charged with establishing buy in, encouraging experimentation and risk-taking, and managing the steep learning curve for teachers. More specifically, they were to

- work with school planning committees to establish goals for the pilot, make decisions about hardware and online learning programs, and redesign classroom space;
- work with OUSD to assess existing bandwidth and develop a plan to ensure sufficient bandwidth to support the pilot;
- provide some professional development—either themselves or in collaboration with others;
- develop a user interface to support a “single sign-on” portal and a “data dashboard” that would integrate information from the online programs to provide real-time information on student progress; and
- support the schools through a change management process.

Two of the schools opted to work with TA Provider 1; these partnerships endured throughout the 2012–13 school year. In these schools, the TA provider took the lead early by laying the foundation for collaborative decision-making and professional learning. They ensured clear memoranda of understandings with the school leadership, built relationships with the teachers, and worked with the district to establish paid collaboration time for pilot teachers. While this kind of change management is, of its essence, an ongoing task, TA Provider 1’s significant investment of time with the two schools at the beginning of the process is reflected in pilot teachers’ higher levels of satisfaction with their technology infrastructure, selection of digital content, classroom management experiences, and use of data and differentiation to personalize student learning experiences.

The two other schools elected to work with TA Provider 2; however, in September 2012, TA Provider 2 discontinued its relationships with both schools. In TA Provider 2’s absence, the two schools, and RFF, scrambled to fill the void. Teachers at these schools had opportunities to participate in professional development provided by an outside organization, and RFF staff
provided ongoing support (though at different levels at the two schools). Ultimately, teachers at these schools were left without the same level of support that teachers at the other schools had and with some concerns about the initial advice TA Provider 2 had given.

**Teacher participation.** Teachers became involved in the pilot in different ways at each school. In two schools, teachers opted in voluntarily; in one school, the principal recruited specific teachers for the pilot; and in the other school, the principal required all teachers to participate. In the end, the number of teachers participating in the pilot ranged from 2 to 12 per school.

**Hardware and digital content.** School planning committees’ work with their technical assistance providers to choose hardware and software also led to different choices. Schools chose hardware ranging from refurbished desktop PCs to new Windows desktops and laptops to Apple laptops. Teachers also selected a diverse set of online programs that spanned English language arts (ELA), mathematics, science, and social studies. Specific programs varied by school and within school by grade level, discipline, and teacher.

**Professional development.** The pilot included professional development (PD) to support teachers in making the transition to blended learning. The PD was to be needs based and adaptive to teachers, with the idea that it would be tailored to teachers’ existing level of knowledge and teachers would be given time to work at their own pace. It came from a variety of sources: RFF’s Director of Blended Learning, TA Provider 1, an external PD provider, and various digital content providers.

### Exhibit 2. Summary of School Participation and Variation

<table>
<thead>
<tr>
<th>School</th>
<th>Grades served</th>
<th>Grades involved</th>
<th>Number of teachers involved</th>
<th>Online content areas</th>
<th>TA provider</th>
<th>How teachers became involved</th>
<th>Hardware</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary 1</td>
<td>K–5</td>
<td>4th grade</td>
<td>2</td>
<td>Math; ELA</td>
<td>TA Provider 1</td>
<td>Recruited by principal</td>
<td>Mac laptops</td>
</tr>
<tr>
<td>Elementary 2</td>
<td>K–5</td>
<td>1st–5th grades</td>
<td>12</td>
<td>Math; ELA</td>
<td>TA Provider 2</td>
<td>Whole school</td>
<td>PC desktops</td>
</tr>
<tr>
<td>Middle 1</td>
<td>6–8</td>
<td>6th–8th grades</td>
<td>7</td>
<td>Math; Social Studies; Science</td>
<td>TA Provider 1</td>
<td>Opt-in</td>
<td>PC laptops</td>
</tr>
<tr>
<td>Middle 2</td>
<td>6–8</td>
<td>6th–8th grades</td>
<td>5</td>
<td>Math; ELA; Science</td>
<td>TA Provider 2</td>
<td>Opt-in</td>
<td>PC laptops and desktops</td>
</tr>
</tbody>
</table>
Evaluation Methods

In March 2012, RFF engaged SRI International to design and conduct an evaluation of the pilot. The purpose of the evaluation was twofold: (1) to support the pilot program by informing mid-course refinements and corrections, and (2) to provide information to the larger education community on the challenges and successes associated with implementing blended learning in a large urban school district. Because the pilot intended to support substantial experimentation in this first year, the evaluation was designed to examine early-stage implementation and does not assess the impact on student outcomes. Project sponsors report a commitment to examining student outcomes as the initiative matures in the next 2 years.

To inform the evaluation, the SRI team collected data through teacher surveys, classroom observations, school visits that included teacher and principal interviews and student focus groups, and additional interviews with key stakeholders.

Teacher surveys. SRI administered baseline (summer/fall 2012) and spring (2013) surveys to all classroom teachers at all four pilot schools. Because the ultimate goal was to implement blended learning schoolwide, the research team sought to collect baseline data from all teachers, including those who might opt to participate in the pilot at a later date (Exhibit 3). However, unless otherwise noted, survey findings are reported for pilot teachers only, combined across all four schools. Although the sample size is small, almost all of the participating teachers completed the survey, and we are confident describing their experiences with implementing a blended-learning approach in the 2012–13 school year; nonetheless, because this is a small-scale pilot, we cannot generalize from these data regarding what might have occurred had the district as a whole adopted a blended-learning approach. In addition, the sample sizes for school-level survey findings, which may be noted in the text, are too small to allow for reliable statistical inference but, in most cases, include all participating teachers at a school so do reflect the perceptions of the particular teachers participating in the pilot.

Classroom observations. A pair of SRI researchers conducted four classroom observations over the course of the year in each of four different classrooms. The research team also conducted post-observation interviews with each teacher. SRI selected the teachers for this aspect of the study in consultation with RFF. Selection criteria included that the teachers represent both the middle and elementary levels, have a mix of prior experience with technology in the classroom, and are making a real effort to implement blended learning in their

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3 Consistent with the U.S. Department of Education’s Institute of Education Sciences (IES) and the National Science Foundation’s guidelines (2013) that urge researchers to reserve “impact research” for “fully developed interventions,” SRI encouraged RFF to focus evaluation resources in this first year of the pilot on implementation with the goal of strengthening the intervention such that it would be more likely to improve student outcomes in the longer term.
classrooms. In the end, the teachers included a middle school math teacher, a middle school social studies teacher, and two elementary school teachers (grades 3 and 4), from three of the four schools.

**School visits.** A team of SRI researchers spent one day at each of the four schools. The visits included principal interviews, observations and interviews with pilot and non-pilot teachers, and student focus groups. The research team asked for student focus groups at each school with students who were in at least one blended-learning class and represented a range of achievement levels. Only three of the four schools were able to put together student focus groups; and, in these cases, the focus group students may not have represented a wide cross-section of students.

**Interviews with key stakeholders.** A total of eight stakeholders were interviewed in spring 2013 from each of the invested organizations—Rogers Family Foundation, Oakland Unified School District, TA Provider 1, and the external PD provider.

**Organization of This Report**

The remainder of this report focuses on teachers’ experiences implementing blended learning in their classrooms. We describe the support they received and the influence of contextual factors as the teachers perceived them. Our findings are organized as follows:

- Technology infrastructure
- Selection and use of digital content
- Classroom management
- Using data, digital content, and small-group instruction to personalize teaching and learning
- Perceived student benefits and teacher satisfaction
- Lessons learned

### Exhibit 3. Response Rates for the Four Pilot Schools at Baseline and Spring

<table>
<thead>
<tr>
<th>School</th>
<th>n All teachers</th>
<th>n Pilot teachers</th>
<th>Baseline 2012 All teachers</th>
<th>Baseline 2012 Pilot teachers</th>
<th>Spring 2013 All teachers</th>
<th>Spring 2013 Pilot teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary 1</td>
<td>19</td>
<td>2</td>
<td>100%</td>
<td>100%</td>
<td>84%</td>
<td>100%</td>
</tr>
<tr>
<td>Elementary 2</td>
<td>14</td>
<td>12</td>
<td>88%</td>
<td>88%</td>
<td>86%</td>
<td>92%</td>
</tr>
<tr>
<td>Middle 1</td>
<td>19</td>
<td>7</td>
<td>84%</td>
<td>100%</td>
<td>79%</td>
<td>100%</td>
</tr>
<tr>
<td>Middle 2</td>
<td>16</td>
<td>5</td>
<td>60%</td>
<td>100%</td>
<td>75%</td>
<td>80%</td>
</tr>
<tr>
<td>Overall</td>
<td>68</td>
<td>26</td>
<td>85%</td>
<td>97%</td>
<td>81%</td>
<td>92%</td>
</tr>
</tbody>
</table>

Evaluation of the First Year of the Oakland Blended Learning Pilot
Implementing blended learning requires, at the most basic level, ensuring Internet access, high-quality hardware, and access to digital content. For many schools and districts, establishing the basic infrastructure to support reliable Internet connectivity and sufficient bandwidth is no easy task. In OUSD, bringing school facilities into the 21st century is a work in progress. At the four pilot schools, the quality of the infrastructure ranged from strong enough to fully support blended learning to so poor that it inhibited efforts to experiment with Internet-based technologies.

In two of the four pilot schools, the infrastructure was in place at the start of the school year and ongoing technology issues were minimal.

In two schools, teachers recognized the substantial work that went into ensuring that Internet connectivity and bandwidth, hardware, and online content were in place at the start of school. Referring to the work of TA Provider 1, RFF, and OUSD, a pilot teacher explained: “They fixed all the computers, they fixed the Internet, they made it so it was very usable.” She went on to explain that TA Provider 1 set up her classroom and established a single sign-on interface for students. She noted that “there’s a lot of behind-the-scenes work that they did at the beginning of the year”—without which implementation of blended learning would have been “really hard.” Another pilot teacher similarly reflected on the importance of “putting all the resources into place to make this happen from day one” and noted that this support is essential for “any school that’s considering going blended.”

Of course, getting to this place involved a variety of actors working together on behalf of these two schools. TA Provider 1 staff met with the district and school principals over the summer to assess bandwidth capacity at the schools. A TA Provider 1 representative explained that they had a strong focus on establishing bandwidth infrastructure over the summer before the start of the pilot because they had heard from teachers that “there was a real lack of [trust] around anything related to technology being stable.” Based on TA Provider 1’s assessment, the OUSD project manager and information technology (IT) lead made sure that additional wireless access points were installed as needed. RFF grant funds purchased some of the wireless access points, and district staff oversaw their installation. Similarly, RFF bought the requested hardware and worked with the district as well as outside contractors to image each machine.

4 When a machine is imaged the hard drive is cloned and saved. The image is an exact replica of a computer at the time the image was taken. This allows a computer to be restored to the state it was in at the time of the imaging, protecting it from accidental deletions, problematic upgrades, viruses, etc.
Even with solid infrastructure in place at the start of the year, technology problems could have emerged at any time; however, at these two schools, teachers reported very few technology issues, and when tech support was needed, the help was there. In fact, in these two schools, 100% of the pilot teachers were “satisfied” or “very satisfied” with the support they received when they or their students experienced technical difficulties. Again, this support came from a variety of sources: teachers had support from RFF’s Director of Blended Learning, RFF’s blended-learning specialists, and TA Provider 1. For example, when technology issues did arise during the year, they could put in “tickets” to TA Provider 1 requesting assistance. The issues that emerged included such problems as a student not appearing on a class roster for a particular program or a student’s password not working. While the teachers varied in terms of the extent to which they took advantage of this support, the teachers who did use it found TA Provider 1 to be “very responsive.” TA Provider 1 staffed its help desk to provide prompt responses, and, if the question was really for an online content provider, they would follow up with that provider and get an answer for the teacher. As RFF’s Director of Blended Learning noted, “In the grand scheme of things, [the issues] are little, but to that teacher, they are immediate.” RFF’s Director of Blended Learning also credited Deep Freeze, a software program that protects the operating system once the computers restart, for the lack of technical issues: “No matter what the kid does, they delete the icon, change the background, delete the bookmark or whatever it is, you just restart the computer, and it goes right back to looking exactly how it’s supposed to look.”

At another school, the Internet and hardware worked, but the launch was delayed because the technology was put in place later; at this school, teacher satisfaction with tech support was mixed.

Because of competing demands and limited capacity of OUSD IT staff, this third school did not have sufficient bandwidth at the start of the school year. In addition, while some classrooms got started with blended learning by October 1st, other classrooms did not have their computers up and running until late January or early February. As the new computers arrived, RFF staff helped unload them and plug them in. These delays inevitably affected teachers’ attitudes about the adequacy of the tech support. Forty percent of the pilot teachers at this school were not satisfied with the support they received to solve technical difficulties, while the remaining 60% were equally divided in their responses between somewhat satisfied, satisfied, and very satisfied.

Teachers’ concerns with the support may have resulted from the delays or because this group of teachers needed more support than their colleagues at the other schools, but also perhaps because they did not have access to the same level of support (i.e., no full-service technical assistance provider, like TA Provider 1). The teachers did, however, receive substantial assistance. For example, both RFF blended-learning specialists worked at this school—
one spent all of her time working at this school (29 hours per week), and the other spent approximately 20 hours per week there. These support providers worked to address a range of needs, including acquiring earphone covers for lice prevention and getting more classroom chairs when needed. As the principal explained, “The support is real.” It may be that, in this case, despite the substantial support, still more was needed.

In one school, technology challenges undermined the pilot effort.

At this school, wireless connectivity worked inconsistently, so teachers could not make use of laptops. When they turned to hardwired computers, they had too few for students and too many for the physical space of their classrooms. Teachers and students also struggled with the fact that they never established a single sign-on system. All of the pilot teachers at this school reported that infrastructure was at least a minor barrier to incorporating digital content in their classrooms.

A teacher explained how all these challenges undermined her ability to implement a blended-learning model in her classroom: “The problems came from hardware and tech issues. You have to get that stuff hammered out and it needs to be as flawless as possible as quickly as possible. As a teacher, you want to start early in the year, get kids used to it, get them acclimated. I was always hesitant. It always felt messy, but it could have been so smooth.” She went on to add, “We know this is something that could work, but you don’t want to sacrifice class time to ‘My Internet’s not working. Help, help, help.’” Another teacher explained that she abandoned blended learning because technical problems arose too frequently, and she did not want to use class time to deal with them.

For a variety of reasons, teachers at this school received less ongoing support from the various blended-learning support providers. After TA Provider 2’s departure, this school had no full-service technical assistance provider. This school also received less support from other sources, perhaps because of a perception that they had ample support onsite (e.g., they had other partnerships and supports available in the school). Another reason they did not receive as much support may be that because of technology issues they were only minimally implementing blended learning. In response to a question about professional development, a pilot teacher answered: “Because our technology wasn’t up and running effectively, it was hard for us to have any kind of conversation about curriculum or how to use programs…I think [our professional development provider] could have been more helpful if our technology wasn’t our issue.”
Online programs offer a variety of instructional features in a range of formats, such as interactive game-based activities, instructional videos, nonfiction articles, and open-ended questions, among others. A critical step in establishing a blended-learning environment is teachers’ selection of digital content suitable to their classroom contexts and the strategic use of that digital content to meet classroom needs. The pilot teachers’ experiences with blended learning point to the importance of establishing a clear vision of blended learning in the classroom prior to implementation: which programs to use, when to use them, and whom they will serve. Establishing this vision requires thoughtful consideration for the role of online instruction in the classroom and a thorough understanding of the features of available digital content providers, an often overwhelming and time-consuming process. Pilot teachers reported a variety of challenges associated with the selection and use of digital content and a range of comfort levels with the integration of digital content; however, an increased understanding of programs’ affordances and constraints enabled purposeful and strategic use of those programs for specific instructional purposes.

Pilot teachers faced a variety of early and critical decisions when integrating digital content: which and how many programs and what role those programs would play in instruction.

In determining which and how many programs to select for their blended-learning model, teachers needed to consider how they planned to leverage online instructional programs for their specific classroom contexts. The decisions they faced about the role digital content would play in instruction included (1) assigning digital content or leveraging adaptive features of particular programs, (2) using digital content for remediation or introduction of new content, and (3) determining which students to target with which online programs.

Assignable versus adaptive digital content. Some digital programs offer adaptive features (see Exhibit 4 below), differentiating the content presented to students based on diagnostic assessments and ongoing achievement within the program. Thus, teachers faced a decision to leverage the adaptive features of certain digital programs or to assign specific content within those and other programs. Leveraging content adaptability allows for facile differentiation of content tailored to individual student performance levels. Assigning content, however, allows for alignment of online instruction with the teachers’ curricular objectives. In reference to her decision
about which online programs to use, one middle school teacher explained, “I was very split. I had no idea what I really wanted. I didn’t know if I needed an adaptive curriculum or a content-related curriculum. So, I actually went with two different curriculums—one’s adaptive, one’s content related—in order to basically make sure that I could cover all my bases.”

Remediation and practice versus introduction of new concepts. By design, online programs allow students to practice skills and learn concepts without teacher mediation. Thus, teachers also needed to determine whether to use digital content primarily for students to practice previously covered skills and build procedural fluency or to introduce new concepts to students and build conceptual understanding. A middle school pilot teacher explained, “It just made me think about...what are you trying to do? Are you trying to support the lessons that you are teaching in class, or are you trying to remediate skills that students don’t have that you really don’t have time to teach? So it depends on what your goal is.”

Which students to target. Digital programs are also designed to provide instruction and practice to a range of student levels and types of learners. Teachers needed to determine which students would benefit from which online programs: all students or specific subgroups, such as low-performing or high-performing students or English language learners. They also needed to consider whether they might use the digital content to serve different purposes for different students.

When selecting online instructional programs, many teachers expressed feeling overwhelmed, especially at first, by the sheer number of products on offer. Teachers were uncertain how they planned to use the online programs and which were the best fit for their classrooms. Moreover, many teachers made their ultimate choice of digital content with limited knowledge of the programs and their features.

Over the course of the year, pilot teachers used a range of digital content for a variety of instructional purposes.

Pilot teachers selected a variety of programs (Exhibit 4) on the basis of their awareness of, access to, and comfort with the programs. Selection of programs typically involved some level of collaboration among school leaders, pilot teachers, and external support providers. Thus, teachers at the same schools often used similar sets of programs in their classrooms.

In addition to online instructional programs, teachers at two schools also used online programs for creating and administering assessments (Exhibit 5). Although these pilot teachers considered these programs part of their blended-learning model, the programs are distinct from digital content for blended learning (Exhibit 4), in that they allow for assessment and immediate feedback but are not designed to provide instruction.
## Exhibit 4. Summary of School Participation and Variation

<table>
<thead>
<tr>
<th>Digital program</th>
<th>Subject</th>
<th>Description of content provided*</th>
<th>Pilot teachers’ understanding and use of content**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achieve3000</td>
<td>ELA</td>
<td>Comparable programs for each school level (e.g., KidBiz3000, TeenBiz3000, Empower3000) to target content area literacy skills</td>
<td>Teachers used this program in ELA for reading and comprehension, writing, and vocabulary practice. Elementary teachers were the primary users of this program. Most teachers leveraged the adaptive features of this program. Some teachers perceived it to target higher-level reading and comprehension skills, while others were skeptical of the rigor or relevance of content.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adaptive content</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>All assignments provided in the same format to routinize literacy and critical-thinking skills</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Routine assessments with immediate results for students and teachers</td>
<td></td>
</tr>
<tr>
<td>i-Ready</td>
<td>ELA, Math</td>
<td>Diagnostic and instructional tool for grades K–8</td>
<td>Several elementary teachers reported use of this program in ELA; some of these teachers also used it for math, although less frequently. All pilot teachers using this program explained its value in intervention with low-performing students.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adaptive content</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Instructional tool that provides students with animated, scenario-based questions</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provides teachers with instruction recommendations based on student progress and downloadable resources</td>
<td></td>
</tr>
<tr>
<td>Khan Academy</td>
<td>Math</td>
<td>Contains a library of content, including interactive challenges, assessments, and videos</td>
<td>Middle school teachers used this program to assign concepts and practice problems to students. Teachers found this program more instructive than the other programs they used. One teacher noted that this program is best for self-motivated students because of its instructive features.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Assignable content</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Offers “hints” for students, which break down the solution to the problem</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provides teachers with immediate class- and student-level data</td>
<td></td>
</tr>
<tr>
<td>ST Math</td>
<td>Math</td>
<td>Game-based instructional software for K–5 and secondary intervention</td>
<td>A few elementary pilot teachers reported using this program, although less frequently than other digital content programs. Curriculum designed for math intervention in grades 3–8 and high school support classes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interactive animations that visually represent math concepts and target conceptual understanding and problem-solving skills</td>
<td>Adaptive content</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adaptive and assignable content</td>
<td>Provides narrated and illustrated instruction and practice problems</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Program provides visual representation of solutions to problems following students’ completion of activities</td>
<td>Provides teachers with student data reports</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provides teachers with student data reports</td>
<td></td>
</tr>
</tbody>
</table>

* Descriptions of digital content are derived from program websites. Note that all digital content providers also describe their content as aligned with the Common Core State Standards.

** Based on interviews with pilot teachers.
### Exhibit 4. Summary of School Participation and Variation (Continued)

<table>
<thead>
<tr>
<th>Digital program</th>
<th>Subject</th>
<th>Description of content provided *</th>
<th>Pilot teachers’ understanding and use of content**</th>
</tr>
</thead>
</table>
| **iLearn iPASS**| Math    | Curriculum designed for math intervention in grades 3–8 and high school support classes  
Adaptive content  
Provides narrated and illustrated instruction and practice problems  
Provides teachers with student data reports | Middle school teachers used this program primarily for review, remediation, and practice with previously covered math topics.  
Some teachers leveraged the adaptive features of the program. |
| Revolution Prep | Math    | Math instruction and practice for 6th grade through Algebra II  
Provides a breakdown of the question if answered incorrectly  
Classes of students work to build a digital city with every correct answer  
Tracks student actions and provides immediate data to teachers | One middle school pilot teacher who reported using this program believed it to be best for diagnosing which part of a question the students don’t understand, as it provides a breakdown of the questions for students. |
| Mangahigh      | Math    | Animated, game-based math instruction  
Assignable content  
Offers instructive videos and games for practice  
Tracks student progress through points earned in games | Two middle school pilot teachers reported using this program and noted that it was engaging because of the competitive nature of the games. One teacher did not believe it focused on higher-order thinking skills or was well aligned with the CCSS. |
| LearnZillion   | ELA, Math | Math instruction for grades 2–12  
Assignable content  
Offers narrated instructive videos | One middle school pilot teacher who reported using this program found it most successful with her independent and high-level learners. |
| McGraw-Hill ConnectED | All | Provides content through an e-book containing visuals and text  
Assignable content  
Allows teachers to create weights for grading and customize standards covered  
Tracks student results and provides teachers with data reports | One middle school pilot teacher reported using this program for ELA instruction. This teacher found it effective for providing practice with text-based questions but ineffective for improving comprehension and the ability to craft an argument. |

* Descriptions of digital content are derived from program websites. Note that all digital content providers also describe their content as aligned with the Common Core State Standards.
** Based on interviews with pilot teachers.
By the end of the year, teachers used digital content for a variety of purposes (Exhibit 6). A majority of pilot teachers reported using digital content to free up time for small-group instruction (71%), to meet the needs or interests of different types of learners (71%), to allow students to learn at their own pace (71%), to provide additional ways for students to access material (67%), to capture student data to inform instruction (61%), and as a diagnostic or formative assessment (61%).

**Exhibit 5. Teacher-Developed Assessment Systems**

<table>
<thead>
<tr>
<th>Online program</th>
<th>Description of content provided *</th>
<th>Teachers’ understanding and use of content</th>
</tr>
</thead>
<tbody>
<tr>
<td>MasteryConnect</td>
<td>Allows teachers to create, upload, and share assessments for any subject and of various types: multiple choice, rubrics, oral assessments, writing assessments</td>
<td>Elementary and middle school pilot teachers reported using this program to upload and administer ELA and/or math quizzes. Teachers used the quick data output from this program to assess student progress. A few teachers used data results to publicly track student progress on individual standards.</td>
</tr>
<tr>
<td></td>
<td>Provides additional resources, such as curriculum maps and standards links</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Automatic and immediate grading for single-answer questions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tracks student results with a breakdown by standard</td>
<td></td>
</tr>
<tr>
<td>Juno Ed</td>
<td>Allows teachers to create/upload and administer assessments for any subject and of various types within the program: multiple choice, multiple answer, true-false, matching, sorting, and write-in</td>
<td>One middle school pilot teacher reported using this program to assess students in math and gather data to track progress.</td>
</tr>
<tr>
<td></td>
<td>Provides additional resources, such as online curricula and textbooks for purchase</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Automatic and immediate grading for single-answer and write-in questions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tracks student results with a breakdown by question and assignment type</td>
<td></td>
</tr>
</tbody>
</table>

* Descriptions of digital content are derived from program websites.
Pilot teachers most often used online programs for remediation and practice; teachers tended not to use the computer-based programs to introduce new concepts, nor did they find the programs well suited to helping students develop higher-order thinking skills. Still, the majority of pilot teachers reported online programs to be of high quality overall.

Most teachers used digital content for remediation and practice of concepts already covered in class, rather than as an introduction to new content or topics aligned with the day’s learning objectives. Only about a third of pilot teachers (35%) reported using digital content to introduce new concepts (Exhibit 6). One middle school pilot teacher stated, “I think that the computers are better at remediation, because, simply put, there is no class time to do remediation.” This teacher valued that online instructional programs allow students to work at their own pace and provide alternate ways to understand previously introduced content. In addition, some teachers believed that introduction of new concepts via online programs is effective only for independent or highly motivated students. One teacher explained that only her most independent learners would successfully gain an understanding of content by watching online instructional videos; this teacher chose to leverage digital content primarily for skill-building and practice problems.

Note: Numbers in graph may vary slightly from numbers in text due to rounding.
Pilot teachers using digital content for skill-building purposes valued the large amount of practice that the programs allow. A pilot teacher explained that some of her students had completed three or four thousand practice problems during the year. She emphasized that she would not have been able to provide them with the same resources on paper. Another pilot teacher referred to the digital content as an “incredible resource” because she always has practice problems on hand without having to search for them or create them herself.

Although pilot teachers valued online programs as a resource for skill-building and believed computer-based small groups to be more engaging for students than non-digital small-group activities, teachers questioned the rigor of the programs. The extent to which digital content addresses higher-order thinking skills is particularly relevant as districts transition to the Common Core State Standards. Although all digital content providers claim their content to be aligned with the Common Core, few teachers, especially math teachers, were satisfied with the digital content’s ability to sufficiently target and assess applied and higher-order skills called for by the new standards. One teacher agreed that her students were more engaged while on computers but felt the students were being “babysat” rather than intellectually challenged. Some math teachers expressed concern over the lack of conceptual understanding required in math programs, describing the programs as “drill and kill.” One middle school math teacher voiced concern over the limited strategic thinking required by the online programs. She explained, “In most cases, I would say that the technology piece is mediocre. There is still a lot of work that all these online content providers need to do to make their product something that is truly beneficial for our students.”

Despite pilot teachers’ concerns about the rigor of online programs and alignment with the Common Core, a majority were pleased with the quality of the online programs. 81% of pilot teachers who use online programs in math and 52% of pilot teachers who used programs in English language arts reported the programs to be of good or great quality. This finding largely reflects teachers’ expectations of digital content and its purpose in the classroom. Teachers leveraging digital content as a resource for remediation and skill-building are likely to be more pleased with the quality of the content than those hoping to use online programs to introduce new concepts or to target higher-order skills.
Teachers faced a variety of challenges with integrating digital content. As they became more knowledgeable about the affordances and constraints of digital programs, their comfort with digital content increased.

Pilot teachers reported a range of barriers associated with integration of digital content (Exhibit 7), including time constraints and insufficient professional development, and expressed a need for ongoing supports. Many of these reports varied by school.

Becoming comfortable with learning the digital content and planning for its integration required time. Two-thirds of all pilot teachers (67%) saw lack of time to learn the digital content as a barrier to using digital content, and more than half of teachers (58%) found lack of time to plan lessons to integrate digital content to be a barrier. Moreover, pilot teachers reported in interviews that planning lessons that align online instructional programs with the daily objectives is more time-consuming than setting aside time for students to work on adaptive programs. With regard to aligning online programs with daily objectives, one pilot teacher explained, “That’s one of those things if I had the time, I’d do that.”

In addition to time constraints, nearly two-thirds of all pilot teachers (62%)—approximately one-half to three-quarters of pilot teachers at each school—identified insufficient professional development on using digital content as a barrier (Exhibit 7). Moreover, a vast majority of all pilot teachers (87%) and a majority of pilot teachers at each school reported that additional support in what digital content is available and how to choose it will be important or very important moving forward. In addition, 62% of teachers identified additional supports in operating and navigating the digital content as important or very important. This finding varied markedly by school: at one school, no pilot teachers found this to be important or very important, whereas a majority of pilot teachers at the other three schools reported this to be important. In interviews, one pilot teacher described the significance of thoroughly understanding each online program in order to be strategic about how and when to implement the programs.

Variation in comfort with digital content, perceived barriers to integration, and desired supports reflects variation in individual teachers’ eagerness to engage with the content and to learn about the programs independently. Teachers’ eagerness varied in part because the way teachers were brought into the pilot differed across school sites. At one school, where teachers did not have the chance to opt in or out of the pilot, teachers sought more guidance on all aspects of integration of digital content and were hesitant to “dive in” before fully understanding the programs. Teachers at other schools—who opted in to the pilot—were open to trying new content and learning about the various programs with less scaffolded support. Individual interest in learning about the programs allowed teachers to feel comfortable and
more expeditiously begin routine integration of online instruction. This finding speaks to the importance of understanding individual teacher needs and providing differentiated support to teachers implementing a blended-learning model. It also suggests that teachers who are not the early-adopter type are likely to need substantially more support than their peers who are more interested in making the transition to blended learning.

**Exhibit 7. Pilot Teacher Reports on Barriers to Integration of Digital Content**

<table>
<thead>
<tr>
<th>Barriers to Integration</th>
<th>Minor barrier</th>
<th>Major/moderate barrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of time to learn digital content</td>
<td>38</td>
<td>29</td>
</tr>
<tr>
<td>Haven't received enough professional development on using digital content</td>
<td>46</td>
<td>16</td>
</tr>
<tr>
<td>Lack of time to plan lessons that integrate digital content</td>
<td>13</td>
<td>54</td>
</tr>
<tr>
<td>Concern about alignment of digital content standards</td>
<td>29</td>
<td>17</td>
</tr>
<tr>
<td>Concern about quality of digital content</td>
<td>25</td>
<td>12</td>
</tr>
</tbody>
</table>

Note: Numbers in graph may vary slightly from numbers in text due to rounding.

*Implementation of only a select few digital programs enabled teachers to develop a thorough understanding of the programs and use them strategically.*

Teachers reported purposefully minimizing the number of programs they used for instruction as a strategy for gaining a more thorough understanding of the ones they did use. One teacher explained the need to scale back the number of programs she incorporated into her class at the beginning of the year. She found it difficult to manage a variety of programs every day and felt that she integrated programs without much consideration for the specific benefit of each program. As a result, she simplified and systematized her weekly routine: she used two digital content programs every day (one for ELA and one for math) and used MasteryConnect every Friday for weekly assessments. She explained that the content is more “infused into the
practice” with this streamlined routine. Similarly, another pilot teacher prioritized two online instructional programs and a computer-based assessment system. She incorporated iPASS to allow for adaptive learning for all levels, while LearnZillion provided her higher-level learners with an opportunity for more independent instruction. Weekly MasteryConnect assessments supplied this teacher with routine data on student progress.

Establishing a clear vision and purpose for blended learning in the classroom emerged as a theme for ensuring smooth implementation. Many teachers reported not having a firm grasp on what blended learning would look like in their classrooms at the start of the school year because they had limited knowledge of the programs and no clear plan for leveraging online instruction for their individual class contexts. Some were able to develop that vision throughout the school year as they gained understanding of the various programs, but many reflected that establishing a vision of blended learning prior to implementation is a critical first step to transitioning to a blended environment.
Classroom Management

For the most part, the blended learning pilot supported the implementation of a “station-rotation model” in which students moved from stations in which they worked online to stations in which they worked directly with their teachers in small-group settings; in some cases, students also went to independent-work stations, off the computers. We found that many teachers struggled to manage multiple learning stations simultaneously such that students were appropriately engaged and benefiting from each one. As a result, pilot teachers sought support from a second adult and established new systems and routines to ensure student accountability (e.g., time on task), monitor student progress toward mastery, and increase opportunities for student choice.

*Introducing and managing a rotational model was challenging for many teachers.*

As with any disruption to the status quo, a blended-learning approach presents new classroom management challenges. Switching to a small-group rotational model, as is encouraged in blended learning, demanded that teachers revisit their established pedagogy and think differently about classroom logistics, behavior management, and lesson planning. In identifying barriers to the use of digital content, 50% of pilot teachers noted that “using computers introduces too many management challenges,” while 63% selected “it is difficult to monitor what students are doing on computers.”

Teachers worked through these challenges at different paces and with varying strategies. Many made substantial progress, but some teachers were ultimately unable to implement part or all of the blended-learning model because of the challenges. An elementary school teacher decided to forgo regular small-group rotations because she could not manage the behavior issues that came with using a small-group rotational model. She noted that her students were not “mature enough” to work independently and required support and monitoring.
Teachers had the added challenge of supporting students so that they could be successful in a blended-learning classroom, including help with basic computer use and troubleshooting as well as self-regulation necessary for independent learning.

Students who had not had much exposure to computers before the introduction of blended learning were learning some basics: typing, mouse use, how to open and close programs, how to save their work, etc. Even those students who had more experience with technology needed time to learn how to navigate technology challenges and familiarize themselves with the digital content. Students also were learning to spend focused educational time on a computer. One middle school teacher spoke about how her students had to build up the stamina to be successful in a blended classroom. She explained that in the beginning of the year her students could not sit down and focus at a computer for 30 minutes, but after a year of blended learning her students wanted to continue working when their 30 minutes were up. Similarly, teachers spoke about how their students built up perseverance over the year, developing better work habits and coping skills when dealing with frustrations. Students became frustrated less often, and when they did, they had acquired strategies to work through the problems and were more likely to help each other, producing more independent and collaborative learners.

Facilitating small-group rotations and easing students into independent learning on the computers were more easily accomplished when teachers had help. In many classrooms where implementation went smoothly, a second adult was in the classroom.

Keenly aware of the management and technological challenges that teachers may face, RFF provided two blended-learning specialists to support the pilot teachers. These specialists supported three of the four pilot schools but spent the most time at the school with the greatest number of participating teachers. Although having a second adult in the classroom was not common, many teachers had some level of support from these blended-learning specialists, an aide (mostly in special education classes), student teachers, or AmeriCorps volunteers. These support staff spent their time supervising students who were not working directly with the teacher (i.e., students at computer and independent-work stations) and responding to technical difficulties (e.g., login issues, frozen computers). Teachers found their help to be very useful and maintained that blended learning was difficult to implement when they were on their own. One teacher who had support from a blended-learning specialist for 8 hours per week explained that she felt “stranded with nobody to help” when she was the sole adult in the room. Similarly, another teacher agreed that it was “much easier” to implement blended learning when she had the help of an AmeriCorps volunteer.
Even teachers who had a second adult in the classroom felt the need to establish new routines and systems to facilitate smoother implementation of blended learning.

The types of new routines and systems that teachers established varied; however, the four most commonly cited strategies were (1) setting clear expectations around computer use and independent work, (2) practicing routines, (3) setting up systems for technology troubleshooting and computer maintenance, and (4) using visible (i.e., posted on the classroom wall) tracking systems that were tied to students’ grades. These strategies served the combined purposes of holding students accountable, monitoring their progress, and facilitating student choice (see text box for more detail on tracking systems). Teachers emphasized the need to explicitly and deliberately teach these expectations, routines, and systems. One teacher recommended posting visuals around the classroom with helpful tips for troubleshooting technology issues. She also suggested providing labeled diagrams of common computer geography, such as the Google toolbar. Another teacher, who was focused on behavior management, explained, “We spent a lot of the beginning of the year just practicing like, ‘Now we are going to do transitions, you have to move in 30 seconds, what does that mean?’…[I] decided that I needed to have everything very specifically thought through.” Another teacher realized late in the year that she had not spent enough time teaching the routines necessary for her students to use the digital content effectively. With this realization, she reverted to whole-class instruction in order to focus on procedures and scaffolding around how to think critically while working independently.

When teachers successfully implemented new strategies and students were comfortable with the procedures and routines, both on and off the computers, teachers were able to let students make more choices. However, giving students more independence came with its own set of management challenges.

Teachers found that the first step toward increasing student self-direction was increasing students’ access to information about their own progress. With the help of individual and class trackers, students were seeing their achievement data in relation to data from their peers, which some teachers reported added a competitive edge to learning. Students seemed to respond positively: some teachers noted increased use of office hours, more resourcefulness among students, and more student-initiated student-to-student tutoring. However, interpreting data (even low-tech trackers that monitor progress) is difficult for anyone, and students are no exception. One teacher pointed out, “It’s hard for a kid to sift through it all and pinpoint exactly what specific activity is holding them back or what specific skill they are missing out on to prevent them from being more successful.”
One middle school math teacher experimented with different ways to most effectively integrate blended learning so it worked for her and her students. She consistently asked for her students’ feedback and viewed the integration as a dynamic process, understanding that finding something that worked this week may not be right in a month as she and her students grew and adapted to this new way of teaching and learning. She worked on new routines in the beginning of the year, with the goal that her students be able to transition between stations in under 2 minutes. This teacher worked closely with another math teacher, whom she called her “thought partner.” They talked often, brainstorming and supporting each other. Together, the two math teachers identified student-directed learning as one of their main goals and came up with ways to scaffold that process for their students throughout the year, gradually releasing more responsibility to them as time went on. This teacher strongly believed in the value of using visible tracking systems to hold students accountable and keep them motivated and able to identify their own strengths and weaknesses: “Anything that you want kids to care about on the computers, we need to track—visually with a class tracker and ideally with an individual tracker—and then you need to tie it to their grade.” Around her room were multiple tracking posters, all tied to different standards, and she often referred to them when teaching or talking with students. She added that the teacher should set expectations and train students to update the trackers to ease the burden on the teacher. By the end of the year, she and her students had developed a system that relied heavily on students’ self-assessments. She would ask the students to assess themselves on the material with a simple thumbs-up thumbs-down and then would choose her grouping for that period based on how comfortable the students thought they were with the material. She generally ended up with three groups—students who needed more direct instruction from her in a small-group setting, students who wanted independent practice on the computers, and students who were ready to take the test. This system allowed for real-time differentiation while empowering the students to practice and trust their metacognition.
Fully realizing a vision of personalized blended learning involves differentiating students’ learning experiences based on more, better, and faster data. Taking this step requires relatively easy access to meaningful data and strategies for providing students with tailored learning experiences, based on good information about what they need next. This section begins with an overview of the new data and data systems to which pilot teachers had access and considers the constraints and supports teachers reported in interpreting available data. Next, we discuss the range of ways teachers made use of data to differentiate instruction. Here, we begin with a focus on the two most common forms of differentiation used by pilot teachers: the use of adaptive computer programs and small-group instruction by performance level. We then present differentiation strategies that were less commonly observed, but that hold particular promise for blended learning’s core goal of personalized learning experiences.

### What New Data Do Teachers Have Access to and What Constrains and Supports Data Use?

Teachers implementing blended learning had access to some combination of three kinds of digital data platforms: individual platforms from each online program; a “data dashboard” that aggregated across programs; and assessment platforms that enabled teachers to create, score, and analyze their own assessments.

*Teachers had access to somewhat different data systems and varied considerably in the extent to which they made use of them.*

A key feature of the online content programs in use across the pilot is access to real-time data about student performance. Exhibit 4 above gives an overview of the different programs in use at the four schools. Given that each program offers its own approach to which aspects of performance are measured (e.g., speed, accuracy, complexity, progress toward a standard) and its own interface for accessing those data (with its own login), the diversity of data available and the number of ways to reach those data have the potential to impede the use of...
data. As one teacher explained, “There is a lot of data that’s available to me, and that I have been advised to access on a regular basis, but whether I can go into three different programs for 90 kids and monitor that, I have to set some priorities.”

One response to the complexity of multiple data platforms is a “data dashboard” that seeks to integrate data from a variety of content providers into an easily accessible and readily interpretable report on student progress. The two schools that worked with TA Provider 1 had access to an aggregated data dashboard. However, few teachers regularly used it to access student data, citing a combination of initial technical difficulties and limited confidence in the information it provided: an early, central concern was that content provider data were not reliably showing up in the dashboard. Accordingly, the perception of initial limitations may have impeded later adoption once the platform was up and running. As one teacher revealed, “I don’t use [the platform] very often…at the beginning of year…the dashboard wasn’t up or something like that. So, I started my kids on Khan Academy [and began accessing its data] because I had a grasp of it.” As this teacher indicated, another solution to the problem of too many data sources was to gain comfort with one or two online programs and use them exclusively.

While digital content providers offer tools to facilitate interpretation and use of data, few teachers have become comfortable using these tools regularly to inform instructional decisions.

Given the large body of new data available, becoming comfortable to make rapid decisions about which data to use, and in which situations, is a challenge. While teachers identified a range of concerns about accessing and using data from online systems, a few important themes emerged:

- The majority of pilot teachers have yet to become comfortable accessing and interpreting data from online platforms.
- Data from provider-generated learning tasks and assessments were widely seen to be poorly aligned with current standards and curricula.
- Even among teachers who regularly used data, making sense of the data in ways that might guide future instruction proved challenging.

Across schools, only 30% of pilot teachers reported finding data from digital content systems to be “very useful.” Importantly, perceptions varied markedly by school (ranging from 10% to 100%). Teachers’ concerns about the data from the online programs typically included a perception that data are not well aligned with current curricula and standards. In fact, 65% of pilot teachers cited alignment concerns as a barrier to data use (Exhibit 8). Not only was this the most commonly reported barrier to data use, a majority of pilot teachers at each of the four schools identified this barrier (ranging from 57% to 100%).
In light of concerns about alignment, teachers were far more likely to trust, and draw on, data from systems that were based on teacher-generated assessments, such as MasteryConnect. Interviews suggest that teachers found data from such systems to be more meaningful precisely because the data were derived from content the teachers themselves developed and thereby aligned with their curricular goals. Some teachers also expressed a general distrust of the data from digital platforms and, more specifically, concerns about conflicting information from digital and traditional data sources. A principal who cautioned against an overreliance on computer-based assessment data relayed a conversation with a teacher: “[The teacher indicated that] her kids really don’t know their math facts this year...and they’re getting little medals and trophies saying that they know their math facts [but] when it comes to paper-and-pencil timed tests they don’t know their math facts.”

At one school, a major challenge was “data overload”: at this school, 80% of pilot teachers identified “data overload” as a barrier. This finding suggests that teachers who use multiple online programs and must pull data from individual programs, as was the case here, frustration with what to do with all the data is a pressing issue. At this school, teachers were concerned about the overwhelming amount of data they were encouraged to access, the lack of support provided on how to compile and use data effectively, and limited time to review data. As one teacher explained, “We are still just overwhelmed with data right now that we don’t completely know what to do with.”

**Exhibit 8. Pilot Teacher Reports on Barriers to Their Use of Data**

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Percentage of teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data reports not well aligned with standards</td>
<td>22% (Minor) 44% (Major/moderate)</td>
</tr>
<tr>
<td>Difficulty accessing reports of student performance data from digital content</td>
<td>39% (Minor) 26% (Major/moderate)</td>
</tr>
<tr>
<td>Difficulty navigating the student data system</td>
<td>26% (Minor) 30% (Major/moderate)</td>
</tr>
<tr>
<td>Data overload</td>
<td>22% (Minor) 26% (Major/moderate)</td>
</tr>
<tr>
<td>Knowing how to use student performance data to inform instruction</td>
<td>13% (Minor) 30% (Major/moderate)</td>
</tr>
<tr>
<td>Difficulty interpreting student performance data</td>
<td>26% (Minor) 17% (Major/moderate)</td>
</tr>
</tbody>
</table>

Note: Numbers in graph may vary slightly from numbers in text due to rounding.
Pilot teachers seek rapidly interpretable snapshots of student progress toward content standards; some also emphasize information to help monitor students’ on-task behavior.

Much is made of online learning’s affordances for rapid access to actionable data on student progress. However, critical to fully leveraging these affordances is a better understanding of what kinds of data teachers perceive as most actionable, and thereby most useful. Through teacher surveys, interviews, and insight from classroom observations, we may begin to articulate the kinds of data teachers seek to guide instructional decisions and help them work toward the goal of personalized learning for all students.

Pilot teachers who used data frequently often referenced it as a resource for providing actionable “snapshots” into student learning. As one pilot teacher explained, “I can get a real quick [look] at what the grades are and see if a lot of kids are doing [well]...or not.” In fact, for some teachers, easy access to timely data about student progress became core to their instructional practice. For example, one teacher referred to himself as a “data conduit” and reported accessing data from online programs multiple times per day and conveying that information to students and parents frequently.

Digging a bit deeper, teachers revealed that data were most useful when they helped teachers track student progress toward mastery of content standards. For example, one pilot teacher described how she used data from an online program to identify gaps in student learning: “[iPASS] is a good diagnostic tool because I track it every week, and I can see if they didn’t master a chapter. I can see which lesson they’re getting stuck on. So if there are common lessons they’re getting stuck on, that’s a flag for me that I need to pull those kids.”

The ability to rapidly monitor student progress contributed to a better use of professional time for several teachers. For instance, some teachers who made use of data from digital platforms were able to leverage time saved by the quick access to data and allocate a greater proportion of time to planning and adjusting instruction. As one pilot teacher explained, “I’m spending a lot less time grading and more time actually looking at the data and planning for reteaching lessons. So it’s like I shifted my time.”

This time shift from grading to planning was most commonly associated with the use of MasteryConnect, perhaps owing to its familiarity (as a teacher-generated system) and explicit connection to content standards. For example, a pilot teacher reported that her data use was similar to that in previous years, but that she was able to be much more efficient in her groupings, thus freeing up more time for follow-up planning: “It’s the same cycle that I [did]
last year...now it just happens a lot faster because I use MasteryConnect, so I could have them through a course in a week and have instant data versus me having to grade all of that.” Another pilot teacher explained, “Having that time to take like 5 seconds to create my groups [using data] and then the work we do is much more impactful in their learning in the small groups because I’m not still struggling to figure out what to teach them.”

While the instructional use of data was commonly discussed by pilot teachers who routinely used data, some teachers also expressed a desire for data to facilitate classroom management. Particularly for teachers skeptical of the learning experiences offered by the online programs, data that helped teachers monitor student time on task were also reported to be useful. For example, pilot teachers at the two schools where skepticism about the use of digital content was most apparent reported using data to identify the amount of time students wasted while on the computers. In fact, some of these teachers seemed hungry for more and better tools to support this use of data. For example, one teacher mentioned that her students often exploited the “hint” button within Khan Academy, which would ultimately provide them with the answers. She was interested in having access to more data to track how many times students used the “hint” button. Her hope was that such data would help her distinguish between students who were actually engaging with the content and seeking support versus those who were not putting forth enough effort.

**How Are Teachers Differentiating Instruction?**

Teachers across the pilot were increasingly using data to differentiate instruction. This was happening primarily through the creation of leveled groups for teacher-led instruction, with a reliance on adaptive digital environments for individually tailored learning experiences. A few pilot teachers were actively experimenting with ways to personalize learning experiences for their students, including more fine-grained grouping strategies, strategic use of different online programs for different students, tracking systems to help teachers and students monitor the learning progress, opportunities for student choice, and enrichment activities to accelerate the learning of high-performing students.

Interviews with pilot teachers revealed different interpretations of what it means to tailor lessons. Some considered grouping by level, with minimal adjustments to instruction for the different groups, to be differentiation. Others used teacher-led small-group instruction as a way to slow down the pace for struggling students, while accelerating the pace for higher-performing students. Other teachers tailored lessons regularly based on student performance on assessments or learning tasks. For example, at least three pilot teachers at one school established differentiation days, where teachers identified low performers on the weekly quiz or standard and worked with them to review key concepts, while the rest of the class worked largely independently on tasks reflecting their level of mastery.
While conceptions of differentiation varied, the two most common forms of differentiation among pilot teachers were the use of small-group instruction by performance level and the use of adaptive computer programs for individualized learning experiences.

Teacher-led instruction was typically adjusted at the group level, with groups consisting of half or a third of the students in a class formed on the basis of diagnostic tests, and with instruction adapted primarily by varying pacing across the groups. In the spring, 63% of pilot teachers reported grouping students by needs or abilities as a primary differentiation strategy (Exhibit 9). Within this model, teachers were sometimes able to work one-on-one with students while the rest of the group worked independently. However, except for a few teachers, such individualized attention was largely an ad hoc strategy rather than an intentional plan to work with identified students.

Most teachers recognized that small-group instruction allowed for more personalized interaction with students, which they valued, but only a few reported employing more fine-grained differentiation strategies in teacher-led settings (Exhibit 9). For example, only 13% of pilot teachers reported adjusting the amount of scaffolding offered to different students. As one pilot teacher explained, her current struggles focused on how to use the data to best support the learning of students she had identified for extra help: “So it’s just me trying to figure out how to most effectively [teach them], because I’ve figured out how to [form] that group [of students needing additional support], but now I’m figuring out how to teach them in a better way because I obviously taught them in the best way I know how the first time. So I have to think of a different way of teaching them.” Thus, while the new data sources were appreciated as a diagnostic tool (to know which students needed help on which concepts), the data were rarely seen as a resource to inform adjustments to instruction. Moreover, the teacher-led small groups we observed overwhelmingly emphasized procedural knowledge and factual recall—again suggesting that teachers may need additional support if they are to make the changes that would allow students to realize the promise of blended learning in the sense of developing higher-order skills.

To facilitate individually tailored learning experiences, teachers typically leveraged the adaptive features embedded in the most commonly used online programs. These features included learning experiences matched to diagnostic testing, leveled texts, adaptive task complexity, and student-driven pacing through the material. For example, a middle school math teacher explained how the adaptive curriculum helped her support the wide range of students in her mathematics classroom: “They’re working on what they need to work on…there are kids that are working on 7th-grade stuff and then there’re kids that are working on 2nd-grade stuff. There’s a huge difference and there’s no way every day as a person I could make a worksheet for that many levels.”
Although most pilot teachers relied heavily on fairly static leveled groups and the adaptive features of online providers to differentiate instruction, a few teachers were experimenting with strategies to provide more personalized learning experiences and help students monitor their own progress. For example, in at least one case, a teacher leveraged the student grouping feature embedded in TA Provider 1’s dashboard, which enabled her to quickly group, and re-group, students in real time based on current performance data. In another example, one pilot teacher explained that she regularly grouped students by performance level and each group received a different assignment. She commented that “at any one time, there are three or four different groups working on three or four different things.” Although these efforts were not regular features in the majority of pilot classrooms, and still largely inchoate where they were seen, they point to the promise of blended learning, and the technology that supports it, and merit attention.

**Some teachers strategically employed a variety of online programs based on perceptions of fit between program and student performance level.**

Teachers who demonstrated a thorough understanding of the benefits and constraints of different online programs seemed better prepared to use the online platforms strategically. These teachers identified certain programs as more effective for certain levels of student performance. For
example, one teacher explained that i-Ready reading was appropriate for her struggling readers because of its focus on phonics and vocabulary, as well as comprehension. Similarly, another pilot teacher explained that she started her low-performing students on i-Ready (for the same reasons as the previous teacher) but assigned her higher-performing students to KidBiz, which focuses less on phonics and more on comprehension. Once students demonstrated growth in reading and comprehension skills, she shifted them to work mainly on KidBiz.

In contrast, pilot teachers with more limited understanding of the learning experiences provided by the different online platforms tended not to use the programs strategically. For example, one pilot teacher who had just begun to use KidBiz in her classroom reported a growing but limited level of comfort with the program. She allowed students to choose between KidBiz and i-Ready, but the choices were driven entirely by the students; she did not attempt to guide students to a particular program based on fit with student performance level.

*Teachers who regularly used data to differentiate instruction often leveraged strategies that support students to monitor their own learning through real-time feedback and progress tracking.*

Some pilot teachers were using data to involve students in monitoring their own learning. For example, 38% of pilot teachers reported using student performance data to provide feedback to individual or small groups of students. Accordingly, a number of teachers credited blended learning with improved opportunities to provide feedback to students and/or help students to monitor their own learning. For example, some online programs enable teachers to offer real-time feedback to students through messages within the platform, and at least a handful of teachers reported taking advantage of this feature.

Further, one teacher emphasized that the abundance of data available allowed students to show progress, and see their own growth, even when they were far below grade level: “The reality is I will have kids who come to me at a second-grade level…I want them to also feel like they’re progressing because they are…I still have kids who are at a fourth-grade level but they started at a first-grade level, so it’s huge. They’ve made a lot of progress, but they wouldn’t show any mastery on [grade-level] standards, because they’re not there.” In contrast, she noted that these students were seeing the progress they were making on the online programs.

In a small number of cases, teachers paired strategies like mastery tracking, which support students to monitor their own learning, with student choice to encourage greater student ownership of the learning experience. For example, one pilot teacher incorporated a weekly free-choice day into her class, where students chose the standard and program they would work on that day. Another pilot teacher used data from digital content programs and her own assessments to provide students with
weekly slips of paper indicating their current performance level. In conjunction with this, she provided each student with multiple options to select as follow-up work: digital content, practice problems in the textbook, or a mini lesson with the teacher. The teacher then used a public tracker to display when students mastered the standards they were struggling with.

### Students are interested in their data

Digital content programs provide many data points for students to track. Progress markers are continually updated and students are motivated by watching their reward points grow or jumping levels in a game-like learning environment. Students competed against their own past performance and felt good when they saw improvement. In focus groups, students reported being very aware of their academic standing in their blended classrooms. Students kept track of their progress by frequently checking their grades, paying attention to individual and class-level tracking sheets, and logging into the specific programs to inventory their reward points and medals. Students in focus groups reported feeling rewarded and empowered when their data showed improvement. The data helped them to make the link between hard work and learning. One student reported, “I feel good. I feel better because you’re like, ‘Wow, I worked so hard.’”

**A few pilot teachers reported enabling higher-performing students to work on different content once they had mastered current standards.**

While the first year of the pilot saw most teachers using differentiation strategies to better support the learning of struggling students, a few teachers were also experimenting with enrichment strategies for higher-performing students. In one middle school math class, students who had mastered the standard(s) for the week were allowed to select their own work two days a week, based on what they thought they needed to learn. The students who had not yet mastered that week’s standard(s) were required to do the work their teacher assigned to them.

Another middle school math teacher allowed her students to try to test out of certain topics. She noted that her students were eager to retake quizzes multiple times in order to achieve proficiency, which she defined as scoring at least 90% on the unit test. Students who demonstrated that they had mastered the unit were pushed to do additional lessons that emphasized a more conceptual understanding of the material. This teacher also allowed her students to explore subjects on Khan Academy that were not directly related to what they were doing in class, but only if the students had finished their math work. She joked that she would often find her middle-schoolers watching videos about art history and theology when they had time to explore.
Perceived Benefits for Students and Teacher Satisfaction

Any intervention in schools ultimately aims to improve academic achievement for students, including Oakland’s Blended Learning Pilot. However, because this was the first year of a pilot that encouraged substantial experimentation, coupled with the small sample size (i.e., four schools) and lack of a well-matched comparison group, SRI did not analyze student test scores. Instead, this section describes the teachers’ and students’ perceptions of the academic and nonacademic outcomes associated with blended learning, as well as teacher satisfaction with the pilot.

*Teachers’ perceptions of the extent to which blended learning has helped increase student learning are mixed.*

Overall, 61% of pilot teachers agreed or strongly agreed that students’ learning and understanding of material had improved due to the increased use of small-group instruction (Exhibit 10). However, perceptions varied by school. At the two schools where implementation went more smoothly, a majority of teachers strongly agreed that student learning improved as a result of small-group instruction. At the two other schools, half or more of the teachers were neutral about the impact of small-group instruction on student learning.

Similarly, close to half of all pilot teachers (43%) agreed or strongly agreed that students’ learning and understanding of material improved due to the use of digital content. However, responses varied by school. In one school, a majority of teachers (71%) agreed that student learning improved due to the use of digital content; in the other three schools, no more than 50% of the teachers agreed with the statement. One pilot teacher felt positively about both aspects of blended learning but suggested that the benefits may not accrue to all students. She explained, “It was clear that blended learning helped certain students tremendously, either due to digital content or more small-group instruction.” Whereas some teachers saw their more independent learners benefiting from a blended environment, others noted gains among lower-performing students. For example, one elementary school teacher described a student who struggled with reading: “I have one little girl who’s really low…she’s a beginning reader but it’s giving her that confidence, and [she’s] gradually going up and up…it’s starting to make a big impact.”
Interestingly, most teachers did not see learning gains translating to improved performance on benchmark testing. Fewer than one in four teachers (22%) agreed or strongly agreed that their students performed better on benchmark assessments since blended learning was introduced in their classrooms.

### Exhibit 10. Pilot Teacher Reports on the Perceived Effectiveness of Blended Learning on Student Outcomes

<table>
<thead>
<tr>
<th>Statement</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students are highly engaged while using the digital content</td>
<td>70</td>
<td>22</td>
</tr>
<tr>
<td>Digital content helps students take ownership for their own learning</td>
<td>48</td>
<td>22</td>
</tr>
<tr>
<td>Students’ learning and understanding of the material has improved due to increased small-group instruction</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Students’ learning and understanding of the materials has improved due to the use of the digital content</td>
<td>30</td>
<td>13</td>
</tr>
<tr>
<td>Students are performing better on benchmark assessments since starting using blended learning</td>
<td>13</td>
<td>9</td>
</tr>
</tbody>
</table>

Note: Numbers in graph may vary slightly from numbers in text due to rounding.

**Most pilot teachers reported that using digital content increased both student engagement and student agency.**

Observation, survey, and interview data all converge on the topic of student engagement. During each of SRI’s 16 classroom observations (across four different classrooms), researchers documented high rates of student on-task behavior while at the computer stations (ranging from 82% to nearly 100% of students). Similarly, when asked on the survey, 91% of teachers across all four schools agreed that students were highly engaged by the online programs. Educators attributed this engagement to the prevalence of technology and gaming in students’ lives outside of school. One pilot teacher explained, “I think it’s a powerful engagement tool and kind of a motivator for a lot of students because, everywhere else in their world, they’re
surrounded by screens all the time, so why not in the classroom, too? Otherwise, it’s such a stark contrast to the world they see outside of school.” Likewise, one of the blended-learning specialists spoke about how to use the game-like nature of the programs to their advantage: “We [are] repurposing their gaming and targeting [it] with an educational twist.”

Students also agreed that the computer programs were engaging, fun, and educational. One elementary school student who participated in a focus group reported, “We use the computers to do math without even knowing it because it’s so fun.” Likewise, a middle school student said, “It’s fun, and at the same time you’re learning. It helps me a lot.”

Although evidence of increased student agency was limited, the majority (70%) of pilot teachers reported that the digital content helped students take ownership for their own learning. Pilot teachers, students, and blended-learning specialists noted that rapid feedback loops and the range of data available (both of which are facilitated by the digital content) helped students take increased ownership of their own learning.

**Blended learning increased students’ comfort with technology and created some opportunities for collaboration.**

Over the course of the year, students’ IT skills expanded and their self-confidence around computer use grew. Teachers reported that students learned, both through explicit instruction and through trial and error, how to troubleshoot many basic technological problems on their own. Additionally, teachers noted that students’ keyboarding skills improved over the course of the year. Students’ development of these skills eased the burden on teachers, alleviated frustration among students, built a sense of community and collaboration in the classroom, and added to students’ sense of self-efficacy and value. For example, a blended-learning specialist trained a group of middle school girls to refurbish older PC desktops. Not only did the students learn a valuable skill that they felt good about, it also allowed the school to scale up its technical capacity quickly and cheaply. Now, if a computer goes down, one of the students can bring it back to life.

In the classrooms, teachers capitalized on students with newly developed IT skills in various ways. One teacher used a class jobs system to rotate the responsibility of setting the computers up for a particular lesson and to fix any issues that popped up around technology. Another teacher admitted to being uncomfortable with addressing technology issues and relying on her students to troubleshoot them for her. The use of students for tech support was more evident in middle schools, possibly because of student maturity and teachers’ allowing more student autonomy, but it occurred in elementary schools as well.
Students also had opportunities to work together while at the computer stations. Because teachers set up norms around small-group rotational models (e.g., do not interrupt the teacher when she is with a small group), students began asking each other for help with online content. When students were on task, the student-to-student interactions were rich and meaningful, including employing higher-order thinking skills when explaining things to each other.

**Teacher satisfaction with blended learning varied. Overall, most teachers who participated in the pilot in 2012–13 would recommend blended learning to others (70%), thought that blended learning met the needs of their students (65%), and were eager to continue with the blended learning pilot program again in 2013–14 (79%).**

Overall, teachers appreciated the pilot. A teacher at the more enthusiastic end of the continuum summarized much of the hope of blended learning: “I loved having the ability to teach to a smaller group of kids; every kid was more engaged, participated more. I did different things with different kids depending on their needs…I think technology has a wonderful place to play in the classroom, especially with differentiation. We have kids here who come in vastly underskilled and technology offers a great path to get them up to par.”

However, the positive response to the pilot masks some variation by school, with teachers from one school consistently showing less enthusiasm. At three schools, at least 75% of teachers reported that they would recommend blended learning to others. At the fourth school, 50% of the teachers agreed or strongly agreed that they would recommend blended learning to others, while the other 50% were neutral. Agreement with the statement “Blended learning meets the needs of my students” also varied, ranging from 40% of teachers at one school to 100% of teachers at another.

In three of the pilot schools, 100% of the pilot teachers reported that they would like to continue with the blended learning pilot in 2013–14. In the fourth school, only a slim majority (55%) hoped to continue. Importantly, 70% of non-pilot teachers across the four schools wanted to participate in the pilot in 2013–14. Percentages also varied by school, ranging from 57% to 100%.
The first year of the blended learning pilot supported substantial experimentation and sought to support teachers during the earliest stages of implementation. When implementation matures and becomes more defined, it will be appropriate to conduct an impact evaluation.

When examining the impact of this intervention on student outcomes, it will be important to be able to clearly define the treatment in contrast to “business as usual.” In other words, the blended-learning model will need to be further defined to reflect a more significant departure in instructional practice across the full range of participating classrooms if a difference in outcomes is to be found. Questions such as what specifically is different in a blended-learning classroom versus a traditional classroom and for whom it is different will need to be considered. It will also be important to identify the specific academic outcomes that the intervention seeks to influence. For example, is it reasonable to expect improved performance on grade-level assessments if the intervention does not focus on grade-level content? Moreover, the new Smarter Balanced assessments are expected to address higher-order skills in English language arts and mathematics. Would it be reasonable to expect improvements in higher-order skills and in both content areas?
Lessons Learned

As technology increasingly influences—and ideally enhances—teaching and learning in K–12 classrooms, the field must consider how best to support teachers and schools in making this transition. We know from decades of reform efforts that there are no silver bullets: it is very difficult for any education reform to meaningfully change teaching and learning (Tyack and Cuban, 1995). Leaders in the transition to blended learning are anticipating a significant “disruption” to the ways teachers teach and students learn. This disruption is grounded in the integration of traditional and computer-mediated instruction and is driven largely by teachers’ use of technology to personalize student learning experiences and by students’ monitoring and directing of their own learning. To ensure that blended learning becomes a strategy for supporting effective instruction and increasing student agency, rather than a replacement of paper assignments with digital worksheets, program developers and educators must be intentional about the role and purpose of online learning, leveraging the best of what it has to offer and adapting as the technology changes. Although current efforts to implement blended learning are in the early stages, lessons from the experiences of the pioneers may help others as they engage in this important work.

How teachers in Oakland were introduced to the pilot and selected to participate proved to play an important role in the extent to which teachers embraced blended learning. Introducing the pilot as an opportunity to rethink instructional practices—not just a chance to get more technology in the classroom—was an important frame for the work. Given the wide range of teachers’ comfort with technology and experience with the instructional strategies consistent with blended learning, adopting blended learning is more of a leap for some teachers than for others. Those teachers who opted in to the pilot were more willing and eager to learn about the affordances of a blended-learning environment. Teachers who were required to participate were more hesitant and encountered more barriers to implementation. A lesson may be that it makes sense to begin any rollout with the more eager, early-adopter teachers and bring along the more hesitant teachers when others have already worked through some of the inevitable challenges and have positive experiences—perhaps even implementation models—to share. Given the early challenges and start-up support that was needed, starting with just four schools was a wise design decision. It also might have been beneficial to have narrowed the scope of the pilot by choosing to work initially in just one content area or at one school level (i.e., middle or elementary). Such narrowing would have enabled more sharing of ideas among teachers and allowed support providers to streamline their efforts.
Once schools and teachers are recruited, the first step to transitioning to a blended-learning model is to acquire the necessary technology infrastructure. This piece should not be underestimated. It is critical and requires a significant amount of up-front planning. In addition to considering Internet access, bandwidth, and hardware, the school building and physical space may need attention in terms of basic electrical capacity, the location of outlets, having a sufficient number of chairs, and overall classroom layout. Another piece is the single sign-on portal for students—a feature that was in place for students at two of the pilot schools, saving substantial time and nuisance. Finally, to feel comfortable integrating digital content, teachers need to have confidence that the technology will work, and, when it does not, they need to know that IT support will be prompt and have offline contingency plans.

After securing the appropriate technological capacity and setup to support blended learning, teachers require ample time and support to become acquainted with the digital content, determine its purpose in their classroom contexts, and select programs that effectively serve that purpose. As Oakland pilot teachers learned, less is more: committing to a few carefully selected programs allows teachers to gain a more thorough understanding of those programs and to implement them more strategically. Educators will also benefit from additional curating and vetting of materials that are aligned to grade-level standards and guidance from individuals who are knowledgeable about the ever-growing pool of online resources.

Pilot teachers valued the adaptive components of the digital content, but some teachers noted an abrupt disconnect between teacher-mediated content and adaptive computer assignments, since the online content typically was not aligned with daily objectives. If a goal is to use technology to support grade-level standards, it will be important for program designs to incorporate greater capacity for teacher assignability and, ideally, cross-mapping tools to facilitate alignment. Along these same lines, teachers found the capacity of online programs to target higher-order thinking skills to be subpar. As teachers transition to the Common Core, online programs focused primarily on procedural fluency will further increase the distance between the content of those programs and teacher-mediated instruction. Whether this is appropriate depends on educators’ goals for online instruction. Of course, facilitating higher-order thinking will require attention to both sides of the ‘blend.’ In particular, teachers will need additional support to develop their practice with small group instruction, including responsiveness to the reality of small groups that are not so small.

To ensure that teachers implement the selected digital content effectively, teachers and their support providers need to plan for classroom routines and systems that support integration of digital content. Monitoring students in a blended environment is a complex task. Teachers must feel comfortable and confident that their students are on task and benefiting from their blended-learning experience at all times. While some teachers set up effective systems to
manage student behavior and transitions, others did not feel comfortable without a second adult in the classroom. Another component to ensuring that students are on task and engaged in online instruction is the extent to which students feel responsible for and direct their own learning. Students’ ownership of their achievement and ability to use metacognition are prominent themes in 21st-century learning and are integral to a blended-learning model. To that end, teachers play an important role in encouraging and scaffolding students’ self-accountability and agency; this includes developing systems to support students in monitoring and taking charge of their learning progress. Some pilot teachers used strategies to invest students in learning via digital content, but most classrooms had not yet reached a point where students were able to diagnose their progress and, particularly, direct their learning experiences. Yet, although teachers’ success with implementation of small groups, student-directed learning, and systems around digital content use varied, pilot teachers rarely had the opportunity to collaborate and observe other pilot teachers’ classrooms. Schools, districts, and others interested in implementing blended learning should consider providing teachers with well-structured opportunities to collaborate with and observe other teachers’ classrooms and to share best practices for creating effective systems around the use of online instruction. Schools and teachers will also benefit from implementation models that have been field-tested with a variety of learners.

Using data to inform instruction is another important aspect of the blended-learning model. The vision of data-driven instruction relies on the idea of accessible data: teachers have faster access to student data that they can easily compile and use to inform instructional grouping and subsequent differentiation strategies. Among pilot teachers, data from digital content programs were largely underutilized, partly because of issues with accessing and interpreting data, concerns about the validity of the assessments, and the lack of alignment between data from digital content and grade-level content standards. Instead, some teachers came to rely on teacher-developed online assessments. Teachers must be confident that the data generated through the online programs are providing them with accurate and readily interpretable information about their students. In addition, the pilot teachers who regularly incorporated data into their practice typically used student results to inform groupings without significantly tailoring instruction within those groupings. Thus, another lesson is that teachers not only need to understand how to access and interpret data, they also must understand how to translate those data into targeted, differentiated teaching strategies that meet their students’ specific needs and abilities. Program developers should consider this need and incorporate features into online programs that suggest how teachers can use their student data.
In sum, implementing personalized blended learning requires the coordination of many essential components: updated technological infrastructure, carefully selected online learning programs, new classroom routines that help students take responsibility for their own learning, robust data systems, and instruction that is tailored to meet the needs of a diverse student population. Over the course of the first year of this pilot, educators in Oakland made progress on all these fronts. Moreover, the pilot’s ongoing emphasis on innovative and effective instruction, increased student agency, and the deliberate integration of facilitative technology holds promise for the future.


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