



WHY BLENDED LEARNING CAN'T STAND STILL:

*A Commitment to Constant Innovation Is Needed to
Realize the Potential of Individualized Learning*

By Sean Kennedy and Don Soifer



WHY BLENDED LEARNING CAN'T STAND STILL:

A Commitment to Constant Innovation Is Needed to Realize the Potential of Individualized Learning

*By Sean Kennedy and Don Soifer
April 2013*

TABLE OF CONTENTS

Executive Summary	1
I. Introduction	2
II. Oakland Unified and the Rogers Family Foundation	6
III. Rocketship Education	12
IV. Summit Public Schools.....	16
V. Carpe Diem Schools.....	21
VI. Conclusions.....	25

EXECUTIVE SUMMARY

Education technology or “EdTech” is a rapidly growing industry in the United States as schools seek to integrate modern technology into the classroom. As technology companies pursue the opportunities in the \$600 billion K-12 education sector, schools feel pressure to bring 21st century tools into the 19th century schoolhouse. Predictably, the massive national investment in classroom technology has not resulted in any appreciable gains in student achievement. Instead, by simply transferring the same instructional approaches to an expensive new medium, these well-meaning efforts severely inhibit educational potential.

Meanwhile, the emergence of innovative, new blended learning instructional models are demonstrating transformative potential in various settings around the country. Blended learning integrates technology into its strategy as a tool to individualize student learning based on data and instructional interventions. Blended learning’s practitioners seek to identify student needs through online work assessments and direct interventions toward skills gaps to accelerate the pace of student learning.

Today, several schools at the forefront of blended learning have taken their instructional models a step further, by committing to constant innovation, toward digital differentiated learning. Under this new approach to blended learning, each and every student’s learning is individualized and adaptive. Student data is captured by technology tools and traditional teacher inputs to monitor student progress toward subject mastery. Online content engages students at their level of comprehension to guide their progress. In turn these systems produce high-quality, transparent, actionable data that empowers teachers to intervene in real-time. The resulting efficiencies accelerate student learning by allowing students to gain subject depth and breadth on their path toward mastery.

Significant challenges remain as data analytics tools continue to improve. This report highlights four exemplary schools that aspire to realize that goal:

- Oakland (CA) Unified School District’s Blended Learning Pilot;
- Rocketship Education;
- Summit Public Schools; and
- Carpe Diem Schools.

Each has developed and is executing evidenced-based instructional models that drive student achievement. They share a commitment to constant innovation as they work toward student-centered learning solutions. Details follow.

I. INTRODUCTION

For taxpayers and private funders of schools, one of the costliest education fads of the past two decades is technology in the classroom. Expensive state-of-the-art computers, smart boards, tablets, and other devices now

occupy enough American classrooms that one would expect their impact on learning to register in a measurable way. According to the Innosight Institute, American K-12 public schools have spent over \$60 billion on 'digital technology' over the past twenty years – approximately the 2010 Gross Domestic Product of the state of West Virginia.¹

"The idea is to integrate the technology into how we teach and learn."

– Salman Khan, founder, Khan Academy

Despite this massive investment in computers and technology, student achievement has stagnated or declined. Instead of improving their productivity or becoming more proficient by leveraging the technology to make their teachers more effective, schools are increasing their costs over time, acquiring expensive technology that quickly becomes obsolete.

Wichita, Kansas' public schools, for example, boast of the "immersion of technologies into the learning environment" including class websites, learning platforms and online classes and social networking tools.² Wichita and other public schools around the country have received federal and state grant money through No Child Left Behind's Enhancing Education Through Technology (EETT) program. These grants and similar local initiatives have allocated billions of dollars with no demonstrable effect on student learning outcomes. In fact, even in those rare classrooms where technology has been integrated into the instructional model the impact has been limited precisely because the programs do not re-design instructional practices to differentiate for individual students based on timely data.³ The technological efficiencies are isolated in 'silos' that may capture student data or deliver content, but do not integrate the results and provide usable information to students, parents, teachers or other stakeholders.

Although there is no evidence technology alone improves student outcomes, proponents of spending billions of dollars on these tools are unmoved. The director of the federal Department of Education's Office of Education Technology, Kate Cator, insists technology for its own sake is worth the investment as she told *The New York Times* in September 2011: "In places where we've had a large implementing of technology and scores are flat, I see that as great. . . . Test scores are the same, but look at all the other things students are doing: learning to use the Internet to research, learning to organize their work, learning to use professional writing tools, learning to collaborate with others."⁴

In the nation's second largest school district, Los Angeles Unified, local bond measures have repeatedly been passed promising classroom upgrades for technology. Measure

Q, passed in November 2008, allocated \$1.925 billion of the measure's \$7 billion to "upgrade schools to modern technology and educational needs" including more modern computers and Internet upgrades.⁵ But LAUSD already reported in 2008, the year the measure passed, that "100% of the District's schools are connected to the District and the Internet... [and] all classrooms have Internet access, with individual sites averaging between one and four T-1 lines and DSL service in bungalows."⁶

Most recently, the district announced plans to spend a record \$500 million on iPads for every one of the 600,000 students in the district.⁷ Despite the hefty price tag, the district's only explicit purpose for the massive purchase is to take the state assessment electronically, without any intended change to instructional design.

LAUSD's strategic plans reveal administrators, teachers, students and parents who are using the technological tools are simply transferring traditional practices to a new, very expensive medium. According to the Cities for Education Entrepreneurship (CEE) Trust's Carrie Douglass, many school districts and leaders are falling into a tech rich 'trap'



Individual and small-group learning is central to Rocketship's instructional model.

by merely “shifting a traditional mechanism to the digital realm, as a poster becomes PowerPoint, a paper essay transferred to a Word document, and book-less libraries rely on Internet-based research.”⁸ For Douglass, a lead architect of one of the nation’s pioneering blended learning pilots in the Oakland (CA) Public Schools before joining CEE Trust in January 2013, schools cannot expect technology, a tool or activity to improve outcomes. Instead, schools must “change their instructional practices, instead of transferring traditional practices to a new medium.”

The founder of the Khan Academy, Salman Khan, explains his views on the transformative potential for technology in education in his book, *The One World School House*. “It’s not enough to put a bunch of computers and smartboards into classroom,” he observes. “The idea is to integrate the technology into how we teach and learn; without meaningful and imaginative integration, technology in the classroom could turn out to be just one more very expensive gimmick.”⁹

Schools that use technology to deliver content, collect data, or improve technical literacy are not engaged in blended learning when they are simply marrying technology to traditional methods. Online courses and Learning Management Systems (LMS) alone are not sufficient if the data is not integrated into a student-centric feedback loop.

A growing number of innovative schools, such as those working with leading support organizations like the Boston-based Achievement Network or Oakland, California-based Reading Partners illustrate this feedback loop can be achieved through data-driven analysis and teacher support without a full classroom-based blended platform, although



Summit math teacher coaching a student.

at a much slower pace. Blended learning, at its best, offers what the most effective classroom teachers do already: differentiate instruction on a real-time basis to individual students’ learning levels and needs. But because this elite level of human capital is not available to every classroom, blended learning provides the capacity to deliver such learning to all students, and in a sustainable manner.

Rick Ogston, the founder of Carpe Diem schools, notes, “Differentiated Instruction isn’t new, but technology takes differentiation to an entirely new and more interesting level, just like it has done for our transportation and business industry.”¹⁰

As Education Elements, a leading designer of blended learning programs, explains, the best blended classrooms harness the adaptive power and precision of technology to:

- Help each student master the content and skills they need,
- Allow teachers to get the most out of their planning and instructional time, allowing them to work with smaller groups of students, organized by subjects, to help them progress at their own pace, and
- Streamline operations with costs similar – or less than – traditional schooling.¹¹

A series of case studies of leading blended learning programs published in 2012 by the Michael & Susan Dell Foundation observed that each school’s implementation advanced its mission of improving learning outcomes for high-needs students, created adjustments

to human capital models used in instruction, improved financial sustainability, and upgraded the support classroom teachers received from their school administration.¹² Unfortunately, blended learning is often confused with technology-rich models. As a result of the term’s broad usage it is limited in its ability to fully capture best practices and the potential of data-driven instruction and customization of educational plans. The term, as commonly used, also is too inclusive of practices that do not individualize learning, create cost efficiencies, and ensure a real-time data feedback loop and continuous improvement.

“Technology takes differentiation to an entirely new and more interesting level.”

– Rick Ogston, Carpe Diem Founder

A number of exemplary schools, profiled in this report, are building on the best practices of data-driven instruction to take blended learning a step further – toward a new model this report terms digital differentiated learning. Premised on continuous innovation and individualized learning, it seeks to fully customize student learning by designing instructional models that produce data feedback loops. Teachers, administrators and the students themselves can differentiate student learning through real-time and actionable data. Freed from the rigid time and space requirements of traditional classroom instruction, student learning can be accelerated and enhanced with the application of appropriate remediation and enrichment. The successful implementation of digital differentiation promises to increase both the depth and breadth of student learning.

Digital differentiated learning consists of but is not limited to:

1. The use of online or computer-based content and assessment tools combined with individual or small group instruction, with opportunities for both remediation and enrichment on a continuous basis.

2. Individual student comprehension and subject mastery serve as a baseline for differentiated instruction.
3. The creation of learning objectives, aligned with state standards, for individual students across academic subjects as defined by content mastery, not by grade level or age.
4. The delivery of content and assessments based on student learning objectives and initiative, with guidance from teachers.
5. The regular incorporation of data assessing individual students' progress toward learning objectives to customize delivery of instructional content and assessments.
6. The program takes place, at least in part, at a supervised, brick-and-mortar location away from a student's home.

The following profiled schools and their approaches to this challenge offer novel applications of a digital differentiated learning model.

II. OAKLAND AND THE ROGERS FAMILY FOUNDATION

Charter schools, freed from many of the bureaucratic constraints and often led by entrepreneurs, have a reputation for innovation and experimentation. Although not all charters are high-performing, their success has transformed the K-12 education landscape in the United States and prodded traditional public schools toward reform.

District schools have been slow to adopt and successfully implement many of these best practices like blended learning. An innovative pilot in the high-needs, large and urban Oakland Unified School District is bucking that trend by introducing blended learning with a commitment to continuous innovation. If successful, Oakland's efforts will chart a path forward for other school systems and change public education for the better.

The challenge and promise of reform in Oakland

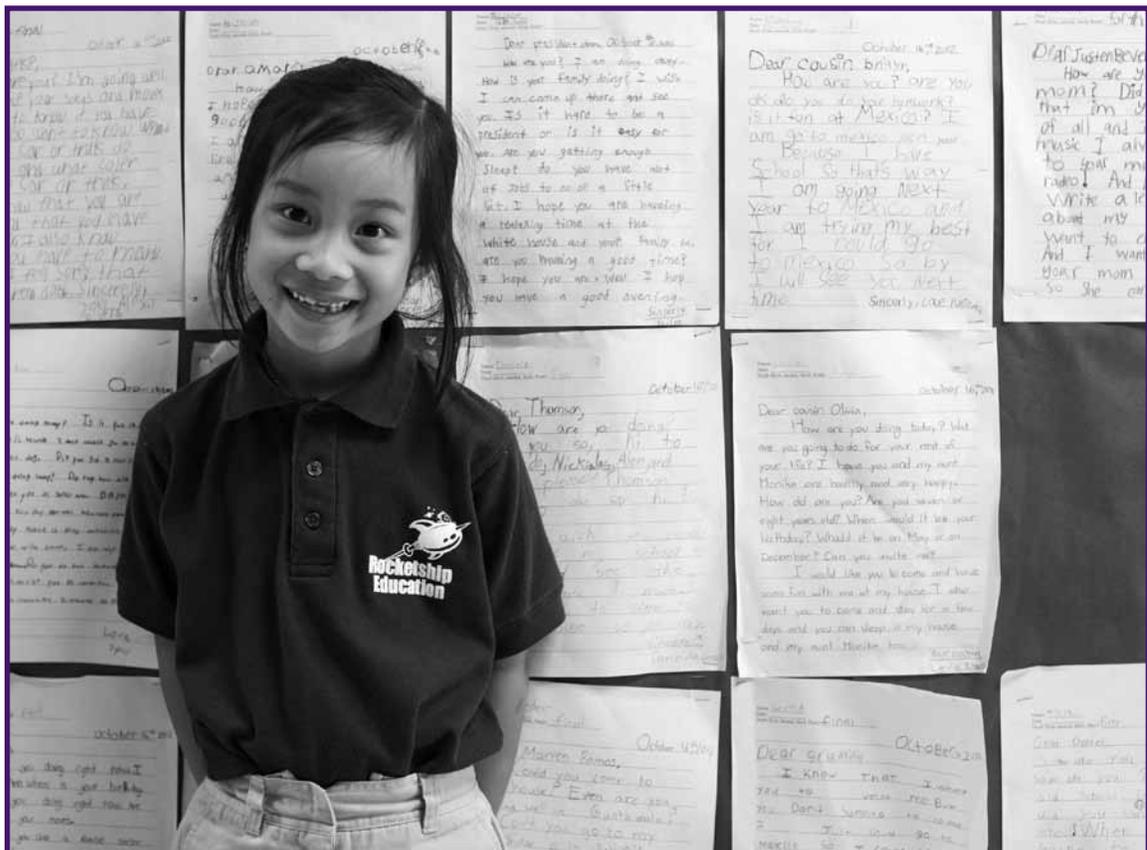
Education reformers focus much of their attention on large urban, poor and minority public school districts and for good reason – it is these districts that have the highest needs, spend the most public dollars per pupil and fare the worst on most standardized metrics. A decade ago, California's Oakland Unified School District was a byword for failure and malaise in public education. In 2003, the State of California stepped in and loaned the district \$100 million in exchange for state administration of the schools.¹³ Subsequent reforms under the "Expect Success Initiative," began in 2005, resulted in Oakland Unified becoming the most improved large urban district in California (2004-2009).¹⁴

Before the state takeover and the district's own reform, Oakland Unified scored 592 out of 1000 on the state of California's Academic Performance Index (API).¹⁵ In 2012, Oakland Unified's API score had risen to 730 out of 1000 – with significant gains in all student

categories including socioeconomic disadvantaged, English language learners (ELL), and students with disabilities.¹⁶

Much of Oakland's success can be attributed to significant governance, budgeting and accountability reforms following best practices pioneered elsewhere.¹⁷ Oakland's commitment to excellence has led the district to pursue innovation and partnerships with outside organizations including the Broad and Dell Foundations. These organizations and many others have been instrumental to Oakland's turnaround and remain vital to its continued success.

The Oakland-based non-profit Rogers Family Foundation, who partnered early with Oakland Unified on their Expect Success Initiative, approached the district in 2011 with a unique offer to expand its reform efforts.¹⁸ Rogers' staff had identified a troubling trend – an increasing number of schools received grant monies for technology programs but these often expensive programs had little success in implementation and showed little demonstrable effect on student learning compared to other programs.¹⁹ Even high-performing schools had significant trouble making a success of their technology efforts.



Rocketship students — Rocketeers — benefit from online learning, but also from highly effective reading and writing programs.

The Rogers Family Foundation brought in Carrie McPherson Douglass, herself an accomplished educator, to overhaul the technology implementation efforts to optimize the educational benefits of its investments. Douglass, who had worked closely with charter schools, noticed that “charter innovations aren’t hitting the mainstream [traditional district schools].”²⁰ One of the primary innovations she saw in charters that was lacking in district schools was the use of data to support – not just monitor – teachers.²¹ According to Douglass, the vast majority of teachers “work really, really hard” and seek to meet every student’s specific needs as quickly as possible – (i.e. differentiate learning). The task is time-consuming, “as much as 80 hours a month and even the best teachers who do use data to drive instruction have a hard time being successful.”²²

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.

– Carrie Douglass and Greg Klein, Rogers Family Foundation

Oakland Unified Profile 2012
63% Socioeconomically Disadvantaged
42% English language learners
11% Students with disabilities

Douglass and the foundation’s Director of Blended Learning, Greg Klein, linked the two challenges – failed technology implementation and cumbersome data use – and found a solution in the charter school innovation of ‘blended learning’ – the application of technology to differentiate and support classroom instruction through data. The foundation consciously decided to launch a blended learning pilot in Oakland Unified precisely because it is a large, urban school district with high needs. Rogers hopes its efforts will “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.”²³

How the Oakland Blended Pilot Works

Intent on using the pilot program as a demonstration project for school leaders and districts of blending learning’s power to drive achievement in traditional public schools, the Rogers Family Foundation designed the pilot strategically so that school leaders opted-in to the program, while Rogers made the final decision on who would participate. From 40 school leaders, the foundation identified 12 schools that had a serious interest in piloting blended learning and conducted site visits. Four sites and school leaders met Rogers’ standards and committed to its terms. Both Rogers and each school signed a two-way Memorandum of Understanding making expectations and responsibilities of the parties clear for schools in the first cohort (Rogers’ and Oakland Unified plan to launch a second cohort in fall 2013).²⁴



Even the youngest Rocketship students understand the value of taking the initiative to learn.

The four pilot schools – two K-5 elementary schools and two 6-8 middle schools – possessed a data-driven culture, strong principal leadership and a collaborative teaching environment.²⁵ All four schools had 2011 API scores well below the California threshold of 800 for quality and student populations that were both more likely to be socioeconomically disadvantaged and English language learners.²⁶ In short, Rogers' proceeded with high-needs schools in a high-needs district that were well-equipped and motivated to excel but were not already excelling.

The pilot launched with a number of unique advantages including being led by two former data-driven classroom teachers (both Douglass and Klein had experience teaching in high-needs schools prior to joining Rogers' team). One school leader, Charles Wilson, principal at K-5 Korematsu Discover Academy (KDA), had already launched a blended learning experiment. That effort helped to improve KDA's API score by 103 points in one year, ten times the state's growth target.²⁷ Wilson helpfully documented his experience in a whitepaper titled, "A Principal's Guide to Blended Learning," released in August 2012. In addition, Oakland's decade-long reform effort has empowered school leaders to affect school-wide change with district support, not interference.²⁸ These uncommon strengths are likely to account for the pilot's success.

In keeping with a desire to achieve both school and instructor buy-in, the Rogers Foundation gave each site some autonomy over model design and implementation. The primary decision left to school leaders and faculty was vendor selection – a choice that would impact the rest of the model design. Two campuses, Madison Middle School (Gr. 6-8) led by veteran Oakland educator Dr. Lucinda Taylor, and KDA (K-5) led by Charles Wilson, chose Education Elements as their combined technology and professional development partner. Elmhurst Community Prep (Gr. 6-8) and EnCompass Academy (K-5) partnered with Junyo for technology and the Alvo Institute for professional development.²⁹

Each school leader worked with the foundation to identify teachers, model design and subject matter that would participate in the first year of the pilot program. All the participating teachers met twice with design teams during the spring and participated in one-week blended learning boot-camps over the summer.³⁰ The teachers and school leaders with their vendor partners designed the systems and chose content based on their own needs.

Both of the Education Elements schools launched at the start of the school year under variations of the rotation model where part of the class is engaged with online content, while the remainder is in direct traditional in-person or small group instruction. Students log-in to an interface that pulls from various subject and topic-based content providers like iLearn math for 6th graders at Madison Middle School. Most of data from the various programs has been aligned with a Hybrid Learning Management System that presents the data to instructors in an actionable format. Content for students and teachers is also prompted by the data to suggest remediated and accelerated content and assessments appropriate to the student and teacher.³¹ At the time of the Rogers pilot launch, 50% of the selected programs integrated with Education Elements platform easily and after a few months most of the selected content worked with the platform.³²

Klein acknowledges that the Rogers' pilot classrooms use content that "still not everything exactly integrates currently into the HLMS" or teacher-facing platforms.³³ Teachers that use the non-integrated content like Scientific Learning for 8th grade science and McGraw-Hill Connect Ed for 7th grade Social Studies chose the programs knowing they would not integrate with the Education Elements platform. Non-integrated content requires much more of these teachers, since much of the data analysis must be done manually.

As Greg Klein observes, the logistical challenges proved enormous though surmountable, "We knew it would be a lot of work, but the amount of time and resources spent on



Students and learning coaches working in Carpe Diem Meridian's second-floor learning center.

technology infrastructure far exceeded our expectations.”³⁴ In retrospect, Klein, who acted as the primary point-of-contact for all four schools at the start of year before on-boarding site-specific blended learning coordinators, would have standardized both hardware and software choices. Technical glitches and content limitations were multiplied since individual schools, teachers and subjects varied unnecessarily.³⁵

For the other two schools, the largest challenge came over a month into the pilot, when in late September after lengthy delays and no blended interface – Junyo abruptly pulled out of the project.³⁶ As Douglass observed prior to the withdrawal, Junyo promised an “organic, flexible and adaptable” interface and data analytics tool.³⁷ Junyo’s approach was innovative and exciting because it seemed close to achieving the promise of blended learning analytics – a student and teacher interface that produced continuously adaptable and actionable data feedback.

In fact, Junyo’s failure to deliver bolstered confidence in the success of the Oakland-Rogers pilot since Klein, Douglass and their team persevered and still managed to launch their blended learning program at the two affected schools. Although the former Junyo schools had the hardware and some of the software to deliver online content, without Junyo the schools lacked a tool to integrate the data so teachers could access it easily, decipher it and turn it into information for remediation or acceleration. On a more basic level, the students lacked an interface for ‘single sign-on’ to access their own data remotely from different hardware or to switch between programs easily. Klein designed a Google Document and standardized passwords so students could reach their online content without wading through too many steps.³⁸

Preliminary results from the Education Elements schools are promising, with significant improvement for some students in core subjects like math and reading.

BLENDING IN TRADITIONAL DISTRICT SCHOOLS

In the fall of 2012, fifteen schools in five rural and suburban school districts across eastern and central Pennsylvania launched the Pennsylvania Hybrid Learning Initiative to pilot a student-centric learning model. The pilot schools, in partnership with Dellicker Strategies and Education Elements, are using blended learning to “deliver personalized, focused instruction to students using real-time data.”

In Rhode Island, Education Elements is partnering with the Highlander Institute to customize student learning at Pleasant View Elementary School, a persistently low-achieving school with a large special needs student population.

Similar initiatives, with foundation support, are under way in Washington, DC Public Schools and Los Angeles Unified School District.

Although Rogers did not explicitly seek to achieve cost savings through its blended learning pilot, it did manage its investment economically. Hardware, software and other combined costs averaged \$971 per student for the 1000 students participating in the first cohort.³⁹ The ex-Junyo schools still struggle with a replacement interface akin to Education Elements' platform but the foundation is actively working with potential partners.

The future of the pilot is not without significant challenges but the foundation and pilot schools are "continuing to push innovation and high-quality implementation."⁴⁰ The pilot's leaders recognize that "high-quality blended learning seems to encourage and enable experimentation and iteration by teachers and schools." This iteration also takes place outside the classroom as school leaders, teachers, and professional development experts and technology vendors continuously adapt the system to improve the quality of data and the modes of student learning. This commitment to iterative change based on data marks the Oakland pilot as exemplar of digital differentiated learning.

The Rogers Family Foundation's work with Oakland Unified is a landmark project that, as the first of its kind targeting high-needs students in traditional district schools, may point the way to successful implementation of digital differentiation in non-charter public schools nationwide.

III. ROCKETSHIP EDUCATION

Rocketship Education, a network of five K-5 charter schools in San Jose, California, has achieved academic excellence by individualizing student learning through technology. Rocketship seeks to enhance learning by adapting its instruction continuously to meet its students' needs. This commitment to constant innovation and improvement sets Rocketship out as model of digital differentiated learning.

Rocketship's students, 90% of whom are eligible for Free or Reduced Lunch and 75% are English language learners, outperform their peers across the state in both reading and math. Rocketship accelerates differentiated learning by collecting data on student performance and acting on that data. According to Rocketship's Online Learning Specialist Charlie Bufalino, "Rocketship's entire academic model is designed in order to give the right student, the right lesson, at the right time."⁴¹

The Learning Lab's success to date is indisputable, but Rocketship believes it can do even better if it brings the online content delivery into classrooms.

The approach has yielded impressive results for the four-year-old charter network. In 2012, the network-wide Academic Performance Index for Rocketship was 855 – one of

the highest scores achieved by schools catering to low-income students. The model has also proven effectively replicable for Rocketship, as its two newest campuses exceeded the state of California's quality marker of 800 in their first year.⁴² Due to this success, Rocketship has chosen to expand outside of the San Jose area and will open its first campus in Milwaukee in Fall of 2013. Over the next few years it is planning to open campuses in New Orleans, Nashville, Indianapolis, and Memphis, while also expanding its presence in Northern California and Milwaukee.⁴³

Differentiating Learning Through Data

To deliver a tailored lesson to every student, Rocketship needs usable data on their progress. Students take the Northwest Evaluation Association (NWEA) test three times a year, internal network-wide assessments every 6-8 weeks, and the STEP literacy test every 6-8 weeks. Rocketship also utilizes Curriculum Associates English-Language Arts benchmarks as well as a variety of internal and class-specific assessments to track and organize data on student performance.⁴⁴ These frequent assessments are analyzed by the network to establish school-wide, grade-level, class, and individual student goals.

Frequent assessments, data driven instruction and strategically targeted small group instruction are certainly best practices but are by no means revolutionary. High-performing schools like DC Prep in Washington, DC and others

across the country that execute these practices well also see great success.⁴⁵ Rocketship takes these best practices and marries them to an instructional model that accelerates the pace and improves the quality of the feedback loop via technology and innovative staffing.

In addition to having traditional classrooms, Rocketship students spend 100 minutes a day in a "learning lab" specifically designed to deliver content, assess student progress, and deliver small group instruction and intervention.⁴⁶ Six instructors called Individualized Learning Specialists (ILSs) staff the room and monitor students working with online content. Students who are struggling can be quickly identified and assisted in real-time with either math or literacy content.⁴⁷

Every eight weeks, Rocketship holds a school-wide professional development day for teachers to plan and collaborate on student-based learning plans. These data days serve as a framework for student-based instruction. Each student has their own Individual Learning Plan (ILP), jointly designed by Individualized Learning Specialists and classroom teachers.⁴⁸ Data from standardized assessments is continuously updated from their classroom and learning lab work to refine each student's ILP and guide teacher interventions and enrichment work.

"Rocketship's entire academic model is designed in order to give the right student the right lesson at the right time."

– Charlie Bufalino, Rocketship Education

The model empowers teachers to differentiate instruction. Students progressing at the same level receive small group instruction in the learning lab, as they do in classroom work. In the traditional classroom, this approach facilitates more effective small group instruction.⁴⁹ For one math teacher at Si Se Puede Academy, the smaller groups – “hot,” “medium” and “mild” – allow them to organize work based on student comprehension and level of difficulty.⁵⁰

Aligning Staff to Learning

Drew Sarratore, a principal at one of the high-performing Rocketship schools in San Jose, expresses frustration when people coo over his teachers. “I want to see the day when people hear that someone is a first grade teacher, their first reaction isn’t ‘oh isn’t that nice,’ in a mildly patronizing tone.” For Sarratore and other school and thought leaders that practice data-driven customized learning, teachers should be akin to doctors – well paid, high performing professionals.⁵¹

Sarratore’s point, and a guiding principle of Rocketship’s model, is a challenge to the dubious ‘equity’ of the ‘factory model’ – that presupposes every teacher as well as every student is interchangeable. For Rocketship, both learning and staffing should be differentiated. Bufalino describes it as “trying to elevate the role of the teacher: giving them more access to data, more ownership of their student results, and more ability to focus on higher-order thinking skills when providing direct instruction. Our blended learning model is one that seeks to empower the teacher.”⁵²

As a charter school, Rocketship has hiring flexibility unmatched by most district schools, making all of its selections through a direct hire process emphasizing teacher talent and instructional skill. Rocketship “relies heavily” on the Teach for America (TFA) program to hire its staff. Bufalino estimates, “approximately 75% of our teachers are TFA corps members or alumni. This has helped us draw from a pool of highly talented candidates due to the selectivity of TFA.” Rocketship also uses the City Year and AmeriCorps programs to identify its ILS staff, who receive extensive in-house training and professional development from Rocketship.⁵³

Excellence through Constant Innovation

One of Rocketship’s greatest strengths is its proven willingness to innovate and adapt to achieve even greater success for its students. In January 2013, Rocketship announced plans to shift toward a rotational model with computers in the classroom and away from the learning lab model.

The learning lab’s success to date is indisputable, but Rocketship believes it can do even better if it captures the results of students’ online work in more timely and usable form for classroom teachers. According to Bufalino, “The integration between the classroom and the Learning Lab was an area that could improve.”⁵⁴ Although ILSs and teachers



Data from Rocketeers' online work is captured and integrated to guide differentiated instruction.

collaborated closely, complete real-time and longitudinal differentiation remained a struggle that Rocketship hopes a shift to classroom rotation will bring.

Rocketship goes further and hopes to expand its use of digital differentiation to other subjects than math and literacy. At present, Bufalino notes they use “technology primarily for basic skills acquisition and practice... [I]n time, we would like to add more science and social studies programs, but currently we are still focused on math and literacy and continuing to find the most effective suite of programs in these subjects to provide our students with the individualized practice that they need in these core areas.”⁵⁵

Both of these challenges point back to the single largest limiting factor for building a fully digitally differentiated feedback loop – how to ensure that diverse data inputs are rationalized and made actionable in real-time. Rocketship and the Oakland Unified pilot worked with Junyo on developing a system that is universally compatible with all content providers, across subjects, assessment systems, and Learning Management Systems. Although Junyo’s unexpected failure in the Oakland Unified project was disappointing and a blow to its partner schools, a renewed focus on data analytics by it and other education

technology firms may lay the groundwork for the tools necessary to transform education by personalizing every student's learning.⁵⁶

Armed with these tools, Rocketship envisions:

"A model that is driven entirely by competency-based learning and individualized student mastery. Models would be flexible, constantly allowing for all students' needs to be met through a variety of instructional methods: direct-instruction, small group work, online technology, and peer-peer learning. Teachers would be armed with a variety of data inputs, as well as instructional tools, and would spend much less [time] lecturing their whole class, and more time focusing on higher-order thinking skills, diagnosing the needs of students and determining the proper intervention."⁵⁷

Rocketship's willingness to push itself toward an even more robust digitally differentiated model is encouraging. For an already high-performing school to continuously reassess and strive for more timely, accurate and useful data demonstrates the culture of innovation necessary to transform K-12 education through digital differentiated learning.

IV. SUMMIT PUBLIC SCHOOLS

Summit Public Schools, network of public charter high schools in Silicon Valley, opened its first campus a decade ago under a "No Excuses" college preparatory approach. Its flagship school, Summit Prep in Redwood City, California boasts a 96% college admittance rate and 100% are qualified to attend the prestigious University of California system

upon graduation. Adjusted for its demographic profile (44% of students qualify for Free or Reduced Lunch), Summit Prep is among the top 1% of high-schools in the United States.⁵⁸

"We want to turn them into self-directed learners."

– Summit Public Schools objective

Its second campus, Everest Public High School, opened in 2009. Both campuses exceed California's quality benchmark on the Academic Performance Index with Summit Prep scoring 858 and Everest 825 in 2012.⁵⁹ These impressive results have led to Summit being named one of America's Most Transformative Schools by *Newsweek*.⁶⁰

Despite these impressive results and national accolades, Summit is committed to driving student achievement further and faster by adopting new strategies to personalize student learning and build a community of self-directed learners.

This commitment to constant innovation led Summit to evaluate its own successes and failures.

Summit's strategic re-think began in 2010. According to its founder

and CEO Diane Tavenner, Summit examined the college success of its first graduating class. Student outcomes data showed that 56% would complete college in four years and 70% of its graduates were slated to complete college in six years.⁶¹ Tavenner describes the data as "strong," noting that, "We had a personal connection to these kids, we knew them and were invested in them."⁶²

Summit wanted to know why 30% of its graduates were not slated to graduate college.

Summit wanted to know why 30% of its graduates were *not* slated to graduate college. The answer surprised the school's leaders who prided themselves on equipping their graduates for college study. Some of the 30% students struggled to finance college, a problem far from unique to Summit's graduates, but many others faced a different hurdle – college was costing more because students required specific remediation, often in math, to bring them up to university-level course work.⁶³ Students had narrow skills and knowledge gaps that went undiagnosed although they met the University of California standards and passed through Summit's courses. Taking remedial coursework was both demoralizing and expensive, leading students to drop-out or work long hours to afford tuition.



Summit's founder and CEO Dianne Tavenner's commitment to innovation begins with her students.

Their analysis found that the “No Excuses” model had an unintended drawback – too much structure. Tavenner says, “We were deeply scaffolding their experience, so they cannot fly on their own. [Instead] we want to turn them into self-directed learners.”⁶⁴ The skills gaps “were like Swiss cheese.” Students lacked basic competencies in core skills taught before they reached Summit. As “students of an entrepreneurial approach,” the school identified blended learning as a model that complemented Summit’s existing strengths – an emphasis on data and high performing teachers – while addressing the skills gap for students. Blended learning offered the charter network an opportunity to innovate and meet its students’ existing needs.

In 2011, Summit launched a limited-scale blended learning pilot program at their newly-opened Summit San Jose campus where its third and fourth schools, Summit Rainier and Summit Tahoma, are co-located. With Khan Academy as a partner for 9th grade math, the two schools jointly designed math modules that allowed students to progress at their own pace and gave teachers important data to create class-level baselines for traditional instruction. Class time was divided between the online Khan exercises and teacher-designed lessons for remediation or enrichment based on student progress.⁶⁵

Three parts of Summit’s blended learning model

- 1) Know and do (can be assessed accurately)
- 2) Understand and apply (cannot be achieved through multiple choice)
- 3) Real-world experience (skill integration, e.g. solve a problem in community)

Summit’s pilot was “eye opening” for Tavenner. The effort was a success, “students achieved significant growth, filling academic gaps with a higher degree of success than we had experienced in our previous ten years of non-blended and personalized efforts.” But the modules focused too much on “inputs like ‘how long, how many right’, not outputs.”

Tavenner thinks the tools are helpful but incomplete. Summit sought to build on the academic efficiencies of the Khan program. Committed to innovating where no existing model met Summit’s high standards, Tavenner’s team designed a three-part mastery formula. Khan’s model is a useful assessment for the first part of the formula but “doesn’t achieve the other two-thirds.”⁶⁶

Summit decided that its fifth and sixth schools, slated to open in 2013, will be designed around this mastery paradigm that Summit is calling the “Optimized School” model.⁶⁷

Leveraging Existing Strengths – Data-Driven Instruction and High-Performing Teachers

Although Summit recognized its challenge, it doesn’t want any changes to take away from its successes. Two of its greatest strengths – data use and great teachers – will be accentuated by this model design.

SUPPORTING AND INCENTIVIZING TEACHER EXCELLENCE IN DIFFERENTIATED LEARNING

To guide these self-directed learners, Summit is building a team of teachers who are expected to be high performing “every minute of every day... high standards and expectations are non-negotiable.”

Summit supports and empowers its teachers throughout their career with 40 days annually of professional development training on various subjects including data analysis, curriculum development and instructional techniques. With high expectations in place, including objective student performance data metrics, teachers are empowered because they are trusted to make executive decisions that will drive their students’ learning.

Summit’s trust in its staff extends to its compensation regime where the school allows teachers themselves to demonstrate their performance to school leaders through “any and all evidence they believe is valid and appropriate to judge student performance.” Although teachers’ base salaries are comparable with adjacent district schools, teachers are rewarded for excellence instead of the traditional district pay scale based exclusively on seniority.

Summit has realized that good teachers are not all the same and they all have diverse skill sets which should be developed into specializations. “The current model assumes a 1st year teacher can do it all, ignoring the fact that it takes time to get great, some can, many never do.” Despite this, Summit strives to bring as many along the continuum toward high-quality teaching as possible with its teacher mentoring and direct training support programs.

The Optimized School model also draws on the success of Yuma Arizona's Carpe Diem schools (discussed later) and the K12 Flex Academies as a 'school without walls.' For Summit's students, their grade level may become meaningless. Students are not grouped by classes and shuffled through the day, but progress across content 'playlists' that help to guide student mastery without the scaffolding of traditional models. Since course designs will inherently require instructor interaction, students will migrate from online content and assessments to face-to-face tutoring and small group instruction to case studies and Socratic-method style lectures.⁶⁸

Summit is developing its own assessment system with partner company Illuminate, which they hope to make an open-source platform, to be continuously improved on by other participating schools. Students will continue to take the norm-referencing exams like NWEA, Measures of Academic Progress and the California State Test but will also join into an Illuminate-designed assessment system. This open-sourced platform will be geared toward Summit's mastery-based learning model three-part criteria. Targeted item-bank questions will assess the 'know and do,' teacher-built assessments will gauge the 'understand and apply' component, and real-world projects will resemble dissertations – student designed and directed projects, approved and monitored by faculty.⁶⁹

Assessments under this system which Summit is 'alpha testing' will allow students to walk into an assessment room, when they are ready to demonstrate their competency and progress instantly – as a community of self-directed learners.⁷⁰

As part of Summit's data-driven individualized learning model at their two new campuses, they are tearing down the figurative and literal walls that isolate teachers from one another and asking them to team up to drive student performance.

The physical layout of the new Summit model will vary but up to 200 students will be in a "great room" with five teachers and two aides, guiding and supplementing self-directed and individualized learning for students. The five teachers serve as a mixed skills team based on teacher interests, talents and competencies. Each teacher (and paraprofessional aide) is differentiated into competency groups – curriculum design, content delivery, and assessment.⁷¹

The entire model creates a division of labor that also shifts toward both specialization and higher order tasks. Basic content delivery and assessment can be moved toward technology platforms like interactive videos and progressive multiple choice exam modules that track and analyze basic comprehension and understanding skills or 'know and do' competencies. The effect of this compartmentalization of teacher's roles and greater latitude for individualization and staff innovation "makes learning more of a team sport."⁷²

The complementary relationship between peers also extends to professional development and resource application. According to Tavenner, “Master teachers will guide new teachers and paraprofessionals. Teams will be augmented by remote teachers, specialists, and tutors supporting students online.”⁷³

Summit’s new model, born of a need to innovate to better meet student needs, is designed to be iterative – constantly adapting to student learning, instructor growth, and improved data quality. The open-source nature of the assessment tool Summit is developing is emblematic of its approach to incorporate best practices on a constant basis. Summit’s tool and its whole model are intended to grow and change over time. Summit’s approach to blended learning speaks to its commitment to continuous innovation and digital differentiation.

V. CARPE DIEM SCHOOLS

The Carpe Diem schools founded in Yuma, Arizona in 1999 are based on a “new pedagogy... that is committed to the unqualified success of today’s technology savvy student, regardless of ethnic, disability or socio-economic status,” according to founder Rick Ogston. Initially, students at the flagship Yuma campus had struggled, scoring no better than county and state-wide averages for math and reading.⁷⁴ Unsatisfied with the results, Carpe Diem committed to constantly innovate and instituted a first-of-its kind blended learning model in 2005.

After implementing its new model, Carpe Diem’s students began to demonstrate powerful gains right away. Today, over 90% of Carpe Diem’s students reach state-level proficiency or advanced marks in reading and math.⁷⁵

These impressive results have not deterred Carpe Diem from its commitment to continued innovation. For Robert Sommers, CEO of Carpe Diem Learning Systems, the school’s



Carpe Diem’s Meridian campus in Indianapolis opened its doors in 2012.

management organization supervising expansion efforts, the task is clear, "School leaders need to be 100% committed to student success."⁷⁶ Carpe Diem continues to refine its model to meet that goal and has begun expanding its school network outside of Arizona.

Carpe Diem began its national expansion in Indianapolis, with the opening of a new school serving students in grades 6-12 in the Fall of 2012. The school, affectionately known as the 'Miracle on Meridian' because of the speed with which the building was built, is going strong with performance results tracking well toward ambitious growth targets.

With the granting of a new charter, Carpe Diem is working toward opening a school later this year that would operate as part of the Cincinnati Public Schools in partnership with the school district. It has received approval to open six charter schools in Indiana, plans to open a school this fall in Fort Wayne, and continues to explore potential expansion in Texas.

School founder Ogston points out that Carpe Diem's model goes beyond how most models for blended, digital or online learning function. "While we do 'blend' using digital curriculum and face-to-face instruction, we are really more of a differentiated instruction (DI) model that leverages technology and teachers to individualize instruction for our students."⁷⁷



Carpe Diem's learning coaches provide students with one-on-one guidance.

Carpe Diem’s blended learning model utilizes a large, open learning center, where students work for approximately half of the school day at their own personalized workspaces with online content through individualized, mastery-based programs. Administrators and “learning coaches” walk the floor, engaging students and providing assistance. Students also have access to help online, including from real-life teachers employed by Education 2020, the school’s online content provider.⁷⁸

Students spend the rest of their day in classrooms with teachers, often in small-group settings. Teachers meet every morning to plan ahead for these lessons, using data provided by students’ online work as well as their own understanding of each student’s individual mastery levels. Students advance based upon their individual progress aligned with state standards, so that at any given time, it is likely that no two students are at the same point in their learning. Carpe Diem’s model encourages placing them at instructional levels based upon their mastery, regardless of their transcripts or grade levels. “Transcript placement is a disservice to students,” says Ogston, “as many have merely matriculated through the system without acquiring the necessary knowledge of skills to be successful in life after graduation from school.”⁷⁹

Yet for all the technology-delivered instruction and personal and small-group interaction that students receive, Carpe Diem’s high-performing Yuma campus school, at about \$5,300 per year⁸⁰, costs half as much per pupil as the national public school average.

A differentiated instruction (DI) model that leverages technology and teachers to individualize instruction for our students.

Carpe Diem is also leveraging its unique model to expand its course offerings. Sommers points to the school system’s future efforts. “The next wave of reform will be in expanding content to include career development, character, creativity, critical thinking, and industry credentialing.” Sommers acknowledges the inherent challenges of these expanded offerings, since these programs “must include sophisticated assessments related to this new content.”⁸¹

One important innovation undertaken in Indianapolis is the building itself. At the school’s Yuma, Arizona campus, Carpe Diem Collegiate High School and Middle School, the model operates in a building retrofitted from its previous configuration. The Yuma campus is all on one floor, with classrooms and offices surrounding the perimeter of the learning center.

For the Indianapolis building, the school introduced a new design, with the learning center on the second floor, and classrooms sharing the first floor with a state-of-the-art fitness center and an open space where the entire school assembles each morning with a high-energy meeting to begin the day. School leaders note that the new physical arrangement is better suited for partitioning the distinctly different energy levels students bring to different activities throughout the school day.

But the innovation at Carpe Diem Indiana does not stop there. Another innovative aspect is the school's approach to quality management as part of the accountability in its charter school governance. The business model utilizes a contract between Carpe Diem Learning Systems, a for-profit education management organization, and the nonprofit board which holds the charter from each authorizing agency.

Carpe Diem, uniquely among charter school operators, has incorporated student performance goals into its management contract. If Carpe Diem Learning Systems, which is responsible for personnel and daily operations, were to fail to advance student learning to agreed-upon levels, it would not be renewed. Carpe Diem's management is working to build on this mechanism, and hopes to implement a more thorough performance-based funding mechanism in the future.



Carpe Diem students plan for a "Students in Action" event. Community volunteerism is an extremely active program at Carpe Diem Meridian, see website, www.cdstudentsinaction.org.

Founder Ogston has personally relocated to Indianapolis with more than half of his time at the new school site. He is embracing his new role as "Chief Eduneering Officer" and constantly works to fine-tune the instructional model and ensure that educators and administrators at the Meridian Street campus capture the Carpe Diem 2.0 approach best suited to the specific educational needs they face.

Ogston has long maintained that it is not simply Carpe Diem's blended learning model, but the ecosystem for learning the school has structured around it, that is most responsible for its success. He is quick to point out that the school was designed to prepare students to be successful citizens of the 21st century, which requires taking ownership and responsibility for their own learning and progress.

For example, students' workspaces each include a prominently-placed name placard that specifies the occupation they would like to pursue after graduation. When students seek academic help, each must articulate what it is they are seeking help with. Such a reliance on high-level thinking skills is an integral part of Carpe Diem's approach.

The overall model of Carpe Diem carries an ethos of results-oriented innovation. From student learning trajectories to school governance and design, the model Carpe Diem has developed pushes itself to better serve the students by leveraging efficiencies to do more for less. Students receive more choice in designing their own high-quality educational experience.

CONCLUSION

In the not too distant future, K-12 education across the United States may break out of the ‘factory model’ and move toward customized student learning, with each student’s trajectory determined by their own needs and interests. Data-driven instruction has enabled teachers and administrators to deliver more differentiated learning paths for students. Coupled with traditional methods, online content tools can accelerate this path and empower students to take charge of their learning. Tools that capture and process student results improve the ability of teachers to deliver individualized instruction.

The challenge remains to build an ecosystem that supports personalized student learning by delivering the right lesson, to the right student, at the right time. The four school systems profiled here are tackling that challenge through a commitment to constant innovation – adapting content delivery, personnel structures and the instructional model toward the creation of a mastery-based data-driven learning ecosystem. Each exemplifies a culture of innovation intended to drive student achievement through digital differentiated learning.

Other school systems have embraced the term ‘blended learning’ but failed to grasp its purpose. Notably, the ‘tech rich’ model of introducing technology into the classroom for its own sake is proving a taxpayer-funded boondoggle with negligible education benefits.

As the founder of the Khan Academy, Salman Khan warns, without meaningful integration of technology, the learning process will make blended learning “one more very expensive gimmick.”⁸²

The approach taken by true practitioners of blended learning is to re-think the relationship between students and teachers, classroom learning and assessments, and crucially how to individualize the learning of every student. Technology is a subordinate tool serving to accelerate and make more efficient this new model of instruction.

Furthermore, exemplar blended learning models strive for continuous improvement in their own model and instructional design overall. Although each school system has approached the task in different ways, none is wedded to their design in its present form. All strive to improve on their model or adopt evidence-based best practices.

Blended learning encompasses learning interactions in which students benefit from their interaction with digital learning to bolster individualized instruction, while teachers are supported with actionable, real-time updates describing the student’s progress and remaining challenges.

In keeping with other disruptive technologies, blended learning's role in dissolving traditional siloed classroom models entails travel along a developmental pathway comprised of incremental and iterative approaches. Continuing transparent experimentation and frank acknowledgement of failure are inherent and necessary features of the approach.

THE NEXT GENERATION OF BLENDED LEARNING

Aside from the four school systems profiled, a number of other schools across the U.S. are taking blended learning, based on continuously innovative practices, to the next level. These charter schools are using blended learning to tackle the specific needs of their unique student populations.

Alpha Public Schools in San Jose, CA (<http://www.alphapublicschools.org/>) is a charter school opened in Fall 2012 serving grades 6 -7, with an 8th grade opening in 2013. Its principal John Glover previously led other high-performing charters in the Bay Area. Nearby many of Rocketship's elementary school campuses, Alpha hopes to build on that success by personalizing instruction for middle school children, largely English Language learners, through a rotational model for blended learning.

Touchstone Education in Newark, NJ (<http://touchstoneeducation.org/>) nonprofit launched flagship Merit Prep in inner-city Newark, NJ, where it plans to open its second Newark charter school in August 2013. Its rigorous instructional model serves students in grades 6-12. The model is designed for subject mastery so that students who graduate have the skills not only to be ready for college, but to have the skills to complete it.

Alliance BLAST Schools in Los Angeles, CA (<http://www.laalliance.org/>) a charter network of 21 middle and high schools. Four Alliance high schools and three middle schools have adopted a BLAST or Blended Learning for Alliance School Transformation model where students attend school full-time and receive instruction, make-up credit, and enrichment both online and in small group instruction environments.

Intrinsic Schools in Chicago, IL (<http://intrinsicschools.org/>) a blended learning charter school serving grades 6-12, opening in downtown Chicago in Fall 2013, marketing to interest underserved populations including English Language Learners.

ENDNOTES

- 1 Heather Staker, "Warning Signs for Personalized Learning," Innosight Institute, June 18, 2012, <http://www.innosightinstitute.org/education-blog/warning-signs-for-personalized-learning/>; State of West Virginia GDP, 2010, http://www.usgovernmentspending.com/compare_state_spending_2010bZ0a.
- 2 "Technology Rich Classrooms," Wichita Public Schools, http://trc.usd259.org/modules/groups/integrated_home.php?gid=1558040&sessionid=b3088103755740b88b20bf8a8caaad4a.
- 3 Matt Richtel, "In Classroom of Future, Stagnant Scores," New York Times, September 4, 2011, <http://www.nytimes.com/2011/09/04/technology/technology-in-schools-faces-questions-on-value.html?pagewanted=all>.
- 4 *Ibid.*
- 5 Los Angeles Unified School District, "2008 Bond Package Summary Final," 2008, <http://www.laschools.org/bond/meeting-archives/download/measures/MeasureQ.pdf>.
- 6 Los Angeles Unified School District, "Education Technology Plan, July 2009 to June 2012" 2009, http://www.lausd.k12.ca.us/lausd/techplan/LAUSD2009EdTechPlan%20_final.pdf.
- 7 Barbara Jones, "LAUSD approves \$50M for computer tablets," Los Angeles Daily News, February 2013.
- 8 Carrie Douglass, Interview with Sean Kennedy and Don Soifer, July 20, 2012.
- 9 Salman Khan, *The One World School House: Education Reimagined*, (Twelve: New York, 2012) p. 122.
- 10 Rick Ogston, interview with Don Soifer, March 11, 2013.
- 11 Education Elements, "What is Blended Learning," www.educationelements.cmo/our-services/what-is-blended-learning/; accessed February 26, 2012.
- 12 Brad Bernatek, Jeffrey Cohen, John Hanlon and Matthew Wilka, "Blended Learning in Practice: Introduction to Case Studies from Leading Schools," Michael and Susan Dell Foundation, September 2012.
- 13 Reason Foundation, "Oakland Unified School District," *Weighted Student Formula Yearbook 2009*, <http://reason.org/files/wsf/oakland.pdf>; accessed February 25, 2013.
- 14 Oakland Unified, "Oakland Unified School District Impact Assessment OUSD Results," 2010, http://www.ousd.k12.ca.us/cms/lib07/CA01001176/Centricity/Domain/14/Impact_Assessment_OUSD_Results.pdf.
- 15 2003 Academic Performance Index (API) Base Report District Report Revised June 14, 2004
- 16 <http://api.cde.ca.gov/Acnt2012/2012GrowthDstApi.aspx?cYear=&allcids=0161259&cChoice=2012GDst2>.
- 17 Reason Foundation, "Oakland Unified School District," 2009.
- 18 Rogers Family Foundation, "Oakland Unified School District Blended Learning Pilot," Summer 2012; http://www.rogersfoundation.org/system/resources/0000/0022/BlendedLearning_final.pdf.
- 19 Carrie Douglass and Greg Klein, Blended Learning in Practice at OUSD, October 2012, https://docs.google.com/document/d/1h_VTayUL2OILxGrHacCQCOS35EJ0MYSfoO5sGzN9KHU/edit.
- 20 Carrie Douglass, July 20, 2012.
- 21 *Ibid.*
- 22 *Ibid.*
- 23 *Ibid.*
- 24 Carrie Douglass and Greg Klein, Blended Learning in Practice at OUSD, October 2012.
- 25 Rogers Family Foundation, "Oakland Unified School District Blended Learning Pilot," Summer 2012.
- 26 *Ibid.*
- 27 Charles Wilson, "A Principal's Guide to Blended Learning," Scientific Learning, August 2012, <http://www.scilearn.com/alldocs/cp/principals-guide-to-blended-learning.pdf>.
- 28 Reason Foundation, "Oakland Unified School District," 2009.
- 29 Carrie Douglass, July 20, 2012.
- 30 Carrie Douglass and Greg Klein, Blended Learning in Practice at OUSD, October 2012.
- 31 <http://educationelements.com/our-services/hybrid-learning-management-system>.
- 32 Carrie Douglass and Greg Klein, Oakland BL Case Study Part, January 2013, <https://docs.google.com/document/d/1QSMBdkIIC7-T-eMXE-V2-rezFG-gB2WNELEN-h6760U/edit>.
- 33 Greg Klein, Director of Blended Learning Rogers Family Foundation, Email to Sean Kennedy, March 13, 2013.
- 34 Carrie Douglass and Greg Klein, Blended Learning in Practice at OUSD, October 2012.
- 35 Greg Klein, Interview with Sean Kennedy, December 12, 2012.

- 36 *Ibid.*
- 37 Carrie Douglass, July 20, 2012.
- 38 Greg Klein, December 12, 2012.
- 39 Carrie Douglass and Greg Klein, Blended Learning in Practice at OUSD, October 2012.
- 40 Carrie Douglass and Greg Klein, Oakland BL Case Study Part, January 2013.
- 41 Charlie Bufalino, Rocketship Education, email to Sean Kennedy, October 5, 2012.
- 42 "Rocketship Top-Performing School System in CA Serving Low-Income Students," Rocketship Education, October 16, 2012, <http://www.rsed.org/media/documents/1RocketshipAPI2012PressRelease--FINAL.pdf>.
- 43 PBS Newshour, "Can Rocketship Launch a Fleet of Successful, Mass-Produced Schools?," December 28, 2012, http://www.pbs.org/newshour/bb/education/july-dec12/rocket_12-28.html.
- 44 Charlie Bufalino, December 15, 2012.
- 45 Sean Kennedy, "Building 21st Century Catholic Learning Communities," Lexington Institute, July 2012, <http://www.lexingtoninstitute.org/library/resources/documents/Education/Building21stCenturyCatholicLearningCommunities.pdf>.
- 46 Brad Bernatek, Jeffrey Cohen, John Hanlon and Matthew Wilka, "Blended Learning in Practice: Rocketship Education," Michael and Susan Dell Foundation, September 2012.
- 47 Charlie Bufalino, October 5, 2012.
- 48 Charlie Bufalino, Rocketship Education, email to Sean Kennedy, December 15, 2012.
- 49 Brad Bernatek, Jeffrey Cohen, John Hanlon and Matthew Wilka, "Blended Learning in Practice: Introduction to Case Studies from Leading Schools," Michael and Susan Dell Foundation, September 2012, p.10-11.
- 50 Drew Sarratore, Principal Rocketship Los Suenos, Interview with Sean Kennedy, September 8, 2012.
- 51 *Ibid.*
- 52 Charlie Bufalino, email response to Sean Kennedy, October 5, 2012.
- 53 Charlie Bufalino, December 15, 2012.
- 54 Katrina Schwartz, "Shifting Tactics: Rocketship Will Change its Computer Lab Model," January 22, 2013, <http://blogs.kqed.org/mindshift/2013/01/shifting-tactics-rocketship-changes-computer-lab-model/>.
- 55 Charlie Bufalino, December 15, 2012.
- 56 Betsy Corcoran, "Shift Happens: Junyo Changes Course, EdSurge.com," September 26, 2012, <https://www.edsurge.com/n/shift-happens-junyo-changes-course>.
- 57 Charlie Bufalino, December 15, 2012.
- 58 Summit Prep website, <http://www.summitprep.net/results/summitprep-at-a-glance2010-2011.pdf>.
- 59 California 2011-12 Accountability Progress Reporting (APR), API Score Report, Summit Schools, <http://api.cde.ca.gov/Acct2012/2012GrowthSch.aspx?allcids=41765880119503>.
- 60 Stacie Chan, "Summit Prep Ranked Top 10 Most Transformative Schools in Nation," Redwood City Woodside Patch, June 21, 2011, <http://redwoodcity-woodside.patch.com/articles/summit-prep-ranked-top-10-most-transformative-schools-in-nation>.
- 61 Diane Tavenner, CEO Summit Public Schools, interview with Sean Kennedy, October 4, 2012.
- 62 *Ibid.*
- 63 *Ibid.*
- 64 *Ibid.*
- 65 Brad Bernatek, Jeffrey Cohen, John Hanlon and Matthew Wilka, p.10.
- 66 Diane Tavenner, October 4, 2012.
- 67 Diane Tavenner, "Moving Beyond Blended Learning," Dell Foundation Blog, September 9, 2012, <http://www.msdf.org/blog/2012/09/dianne-tavenner-moving-beyond-blended-learning/>.
- 68 *Ibid.*
- 69 Diane Tavenner, October 4, 2012.
- 70 *Ibid.*
- 71 Diane Tavenner, October 4, 2012.
- 72 Tom Vander Ark, "How to Pay Teachers,"
- 73 Diane Tavenner, October 4, 2012.

- 74 Rick Ogston, "Carpe Diem Blended learning Model," pp.2-3; Ben Debow, "Carpe Diem Charter School Seizes Tomorrow's Innovations Today," *Heartlander*, April 22, 2011, <http://news.heartland.org/newspaper-article/2011/04/22/carpe-diem-charter-school-seizes-tomorrows-innovations-today> .
- 75 Rick Ogston, "Carpe Diem Blended Learning Model," pp.2-3.
- 76 Robert Sommers, CEO Carpe Diem Learning Systems, email to Don Soifer, February 26, 2013.
- 77 Rick Ogston, March 11, 2013.
- 78 Staker and Horn, 12; Quote and background: Rick Ogston, interview, June 15, 2012.
- 79 Rick Ogston, March 11, 2013.
- 80 Rick Ogston, "Carpe Diem Blended learning Model," p 5.
- 81 Robert Sommers, CEO Carpe Diem Learning Systems, email to Don Soifer, February 26, 2013.
- 82 Khan, p 122.



**Don Soifer is
Executive Vice
President at
the Lexington
Institute.**



**Sean Kennedy
is a Fellow at
the Lexington
Institute.**



April 2013

1600 Wilson Boulevard, #900
Arlington, VA 22209

Telephone: 703-522-5828
Fax: 703-522-5837

Web: www.lexingtoninstitute.org
mail@lexingtoninstitute.org