sustaining innovation & preparing for scale

Financial Sustainability Research & Analysis of Personalized Learning School Models

LEAPinnovations

AFTON

contents

executive summary

Breakthrough Schools Chicago

Breakthrough Schools Chicago launched in 2013 as one of two inaugural regional funds of the national Next Generation Learning Challenges (NGLC) program. NGLC supported the launch of innovative new school models across the country through more than $40 million in challenge grants. The regional funds were designed to accelerate student achievement by opening a critical mass of next-generation schools in a specific area supported by a local partner. Supported with matching funds from the Bill & Melinda Gates Foundation, The Chicago Public Education Fund, The Joyce Foundation, Northern Trust, the William G. McGowan Charitable Trust, IMC Financial Markets, and Patty and Craig Henderson, the Breakthrough Schools program has provided planning or implementation grant funding to 22 schools across the city. Additionally, with the success of Breakthrough Schools in Chicago and their other inaugural regional fund, Washington D.C., NGLC has since expanded the program to five additional sites.

In Chicago, an incredible transformation is taking place. Across the city, innovative principals and teachers are redesigning their approaches to teaching and learning school-wide, creating experiences for students that are personalized to their individual needs, strengths and interests, that empower them to take ownership of their learning, and that allow them to progress based on demonstrated competency.

The LEAP Innovations Breakthrough Schools Chicago program (Breakthrough Schools), a regional fund of the national Next Generation Learning Challenges initiative, has helped to lead this charge, providing start-up funding, access to national experts, and other supports for schools as they prepare for and implement whole-school transformations. Chicago's resulting models have become national exemplars for personalized learning, and the city is becoming a hub for this work. Harnessing the creativity and commitment of local teachers and school leaders, along with the strategies and experience of national experts, these schools show the beginnings of what the future of education will look like:

The student experience

Each individual student has their own personalized learning path, tailored to their specific needs and strengths, within multi-age classrooms and flexible learning spaces.

Students take ownership of their learning, selecting topics of interest to explore through project-based learning opportunities, often connected to the community, and are supported as they develop the agency necessary to become lifelong learners.

The teacher experience

Teachers collaborate across grade levels and subject areas, breaking down siloes and cultivating innovation throughout the building.

Technology is used deliberately to provide real-time data on student achievement and challenges, and to provide quality adaptive content to meet a wide range of student needs.

The development of these new school models took place amidst one of the most dire budget crises the State of Illinois has ever seen. Before a budget passed in July 2017, Illinois had been without one for more than two years. School funding remained in jeopardy until a last-minute bill was passed more than a month later, overhauling how the state funds public education, and providing relief for Chicago's legacy pension debt and future pension payments. In total, this funding reform bill provided Chicago Public Schools with more than $450 million in new state and local resources to support their FY18 budget. We applaud district leaders, principals and educators for championing innovation and participating in the Breakthrough Schools program in the face of these fiscal challenges.

Given the early promise of personalized learning and the budget realities that exist in Chicago, Illinois, and across the country – past and present – we must understand how to make this kind innovation not only effective for students, but also sustainable. Now more than ever, we must invest in innovation to create the best possible outcomes for students, and to build the creative, collaborative, and highly skilled workforce that Chicago will need to be competitive in the 21st century. How much does it cost to develop a personalized learning plan for an entire school and implement it across the building? How much does it cost to maintain? Can it be done within the constraints of a typical school budget, and survive always-looming budget cuts? What system-level inhibitors does the innovation process expose? And how are strong leaders navigating and working around these in the current budget climate? In this report, LEAP Innovations and Afton Partners begin to answer these questions based on early data gathered from six LEAP Breakthrough Schools. The answers, overwhelmingly, show great promise for this work.

snapshot - key insights

Teachers remain the most critical resource in personalized learning models

Teachers continue to be considered the most important resource by principals in implementing personalized learning, regardless of model. Resource allocation decisions demonstrate this point in most schools. The teacher's experience in a personalized learning school looks much different than in a traditional model. In personalized learning environments, educators prioritize facilitating learning over delivering instruction, employing new teaching and learning strategies designed to enable student choice and foster student agency. Examples of these strategies include frequent one-on-one student-teacher conferences to review student progress and to set goals, increasing student choices in how they learn and demonstrate mastery, and using real-time data to inform instruction.

Many schools have also innovated their staffing structures. As will be discussed in more detail throughout this report, many schools have adopted team-teaching models with teacher leaders, often within multi-age classrooms, and have also created more time and structures to allow for meaningful teacher collaboration.

Professional development is an important up-front investment, but is manageable long-term

Professional development is particularly important in preparing for the transformation to personalized learning, accounting for 21 percent of schools' start-up costs. However, in the recurring budget, principals are not increasing professional development spending. Instead, principals are often dedicating existing professional development and planning time to plan for and implement personalized learning, and teams have made it a focus in their already contractually required professional development days.

Personalized learning is NOT just about technology – and we see this in the numbers

Technology is a strong enabler of personalized learning models, especially in giving teachers real-time data on student progress. The use of data is crucial to all the personalized learning models in the study. This is typically enabled or enhanced through effectively procuring and leveraging hardware and adaptive software tools, which accounted for 41 percent of schools' start-up costs. However, total recurring IT spending did not increase substantially, and accounts for about two percent of total budget by year five. Costs of replacement devices, however, need to be considered as a recurring, long-term investment.

New teacher leadership roles are important, but require financial flexibility to fund

Three schools identified teacher leadership as critical to their model. These schools have moved away from traditional classroom staffing approaches and adopted team-teaching models with teacher leaders assuming additional responsibility.

However, current compensation policies do not allow for increases in teacher pay for taking on leadership roles. As such, salaries and benefits do not reflect this additional work. To provide teachers with increased compensation for their increased responsibilities, principals either used budget flexibilities to compensate teachers with stipends out of one-time funding, or they sought waivers to formally increase salaries. Long-term, scalable solutions remain an open question.

Non-teacher instructional support staff were leveraged to support innovative models

Two of the six models emphasized the importance of non-teacher instructional staff in supporting teachers. In one case, non-teacher instructional staff were critical to the school's multi-age, co-teaching model, staffed by master teachers, resident and intern teachers, and instructional coaches. In another case, student teachers were used to both support teachers in a rotational model, and also to create a pipeline of teacher candidates who have significant exposure to innovative learning models.

For the schools in this study, we've found that whole-school personalized learning models:

- Require modest investment to start – start-up costs ranged from $338K to $780K across the six schools, and $233 to $1,135 on a per pupil basis
- Prove sustainable without ongoing grant funding on typical district budgets
- Can even sustain severe budget cuts in a way that is comparable to or exceeds traditional Chicago Public Schools while personalizing the learning experience for students

Even more exciting, the innovative features of the models actually contribute to their sustainability. In the pages that follow, we detail these innovative features, and how creative structures, schedules and staffing roles personalize learning for students under even restrictive budget scenarios. We also explore the role and importance of technology in personalized learning environments and school budgets.

Ultimately, the sustainability and scale of these models relies on more than just financials. Studying how school leaders prioritized and budgeted for their new school models – and how they found ways to work around roadblocks to innovation – also illuminated policy changes that must be made to scale this work more broadly, from current teacher

compensation policies that impede teacher leadership roles, to stymied procurement, to restrictive grading and seat time requirements.

This report represents an exciting beginning. For any innovation to take hold, it must be effective and sustainable. Already, we're seeing promising indicators of success: increases in scores on the Northwest Evaluation Association (NWEA) Measures of Academic Progress (MAP) test, taken by all Chicago Public Schools elementary students, in one Breakthrough Schools third-grade pilot classroom were striking. The school reports that reading attainment increased 51 percent in one year – growing from 35 percent of students meeting attainment benchmarks in 2015-2016 to 86 percent in 2016-2017. Their math results were equally impressive, reporting a 45 percent growth in student attainment – moving from 46 percent of students meeting attainment benchmarks to 91 percent within one school year. And as we outline here, not only can innovative school models be sustainable, but their innovative structures can make them so.

Despite many challenges, the future for education innovation in Chicago can be bright. Over the past several years, Chicago Public Schools has seen some incredible gains, including a record-high five-year graduation rate of 77.5 percent and a "Freshmen on Track" of 88.7 percent – a key graduation rate indicator.[1] While these gains are important, there is still much work to be done to help each and every child succeed. The University of Chicago Consortium on School Research estimates that just 18 percent of CPS 2016 ninth-graders will obtain a bachelor's degree within six years of high school graduation.[2]

As a field, we must continue to prioritize the transformation to personalized learning, scaling school models that both prepare students for the 21st century economy and that are sustainable on reduced resources. Further, we must tackle budget pressures, restrictive policies and other roadblocks head-on. Together, we can translate our growing momentum into life-changing outcomes for our students, here in our city and throughout the nation.

introduction

The movement to transform our approach to education to one that puts students at the center is gaining traction across the country. District and school leaders, along with national foundations and funders, are embracing innovation, harnessing technology, and thinking differently about teaching and learning strategies to create next-generation, personalized learning experiences and structures for students of all ages.

More than 3,100 superintendents, representing 19.2 million students, have signed the "Future Ready Pledge," a national movement to encourage and support districts to adopt personalized, research-based digital learning strategies.[3] And since 2010, Next Generation Learning Challenges (NGLC) has invested $40 million, supporting more than 100 innovative schools and regional incubators to create critical mass of next-gen schools in their regions.

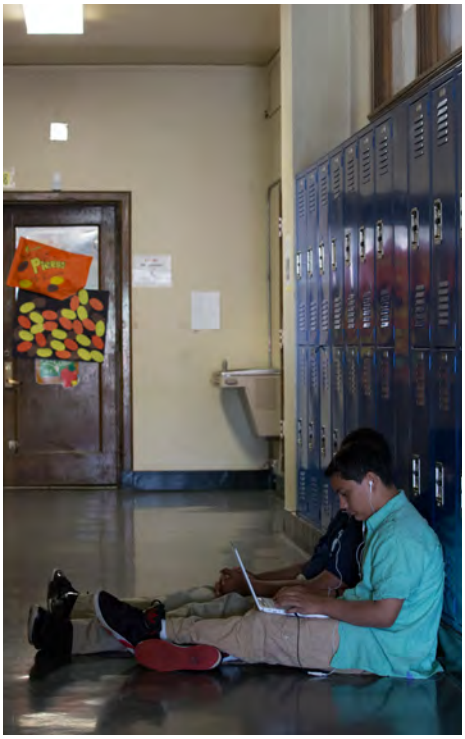
Chicago is quickly becoming a leader in this work, thanks to forward-thinking teachers, principals, and district leaders, along with supports from the philanthropic and non-profit communities. The LEAP Innovations Breakthrough Schools Chicago program, an NGLC-funded regional incubator, has helped to lead this charge, providing start-up funding, access to national experts, and other supports for schools as they prepare for and implement whole-school transformations. Supported with matching funds from the Bill & Melinda Gates Foundation, The Chicago Public Education Fund, The Joyce Foundation, Northern Trust, the William G. McGowan Charitable Trust, IMC Financial Markets, and Patty and Craig Henderson, the Breakthrough Schools program has provided planning or implementation grant funding to 22 schools across the city. Each next-generation school model is unique, developed by the leaders and teachers at each school with guidance and support from LEAP and other national experts.

The idea of personalized learning is not new. Benjamin Bloom's landmark study, which showed that students who learned through one-to-one tutoring performed better than 98 percent of the students in the

traditional classroom, is over 30 years old.[4]

So why the sudden urgency? First of all, there is now unprecedented access to tools and technology to help teachers take the idea of one-to-one tutoring – a personalized learning experience – and actually make it possible for all students.

And second of all, there is unprecedented need. The same advances in technology that are giving teachers new tools to personalize learning are changing every aspect of our lives, creating jobs that didn't exist before and requiring new skills of the workforce. To prepare our children for the 21st century economy, we must rethink our ways of teaching and learning – prioritizing cognitive and non-cognitive skills, creating new pathways for attainment, giving students real-world learning experiences connected to the community, and ensuring that the unique needs, strengths and interests of each and every learner are addressed.



Despite consistent gains in student standardized test scores and graduation rates, too many students are still behind, and the achievement gap continues to grow. The University of Chicago Consortium on School Research estimates that just 18 percent of CPS 2016 ninth-graders will obtain a bachelor's degree within six years of high school graduation.[5] Using the College Board's benchmark, 48.2 percent of CPS students met or exceeded reading/writing benchmarks on the SAT in 2017, an approximation for college readiness, and 26.7 percent met or exceeded math benchmarks.[6] In grades 3-8, more than 70 percent of students did not meet expectations in reading on the PARCC exam in 2016, and more than 75 percent of students did not meet expectations in math.[7]

But students need to be ready for more than just college. Teachers are now faced with preparing the next generation for careers that don't even exist yet. Now more than ever, students must be equipped – and empowered – to be lifelong learners. Non-cognitive skills – grit, collaboration, self-motivation and others – are imperative, as are finding ways to better instill them in students in the classroom.

These challenges require new approaches to education, approaches that tailor learning to students' individual needs and strengths, and that encourage student agency and ownership. These approaches – known collectively as "personalized learning" – are being designed and implemented in forward-thinking classrooms, schools and districts nationwide.

Already, we're seeing indicators that Breakthrough Schools are making promising strides. One school reported a surge in the percentage of students performing at grade level between the 2015-2016 and 2016-2017 school years as reported by NWEA attainment percentiles – moving from the 46th percentile to 59th percentile in reading and from the 31st percentile to 50th percentile in math.

Another school reported that 39 percent more students in the fourth-grade pilot classrooms met their annual NWEA growth goals in reading in 2015-2016 than they did as third graders in 2014-2015 – an increase from 29 percent to 68 percent making expected growth. And across the board, schools are reporting dramatic increases in student engagement and ownership, along with stark declines in suspensions and other discipline issues.

We will continue to track metrics on student progress, achievement and the development of the skills needed to succeed in college via longitudinal studies with research partners. One such study, in partnership with the Wisconsin Center for Education Research at the University of Wisconsin-Madison, will codify the second cohort of Breakthrough Schools models and highlight areas of effectiveness, areas of continued improvement and student outcomes.

But to drive broad impact and improve outcomes for all students, we also must show what is sustainable. For this report, our colleagues at Afton Partners, a leading expert on school financial sustainability, evaluated six school models, including district schools and charter schools, from the Breakthrough Schools program – three from our 2014 cohort and three from our 2015 cohort. Through studying publicly available past financial budgets and results, current budget planning information provided by Breakthrough Schools principals, and forecasted financials, along with extensive principal interviews, Afton has provided key insights into:

- The cost of launching a personalized learning model
- School priorities when planning for innovation
- The sustainability of the models
- The trade-offs principals might make in the face of budget cuts
- Policy changes and structural supports that could improve the likelihood of successful scale

In this report, we share these key insights, from how the innovative features of new models contribute to their sustainability, to the policies that inhibit this work and how principals are finding ways to innovate despite constraints. Together, they provide a holistic picture of what it would take to scale innovation in schools more broadly.

Guiding Research Questions

What resource allocation decisions have schools made to date and how do these compare to resource allocation decisions prior to conversion to personalized learning?

What is the total cost of launch of or conversion to personalized learning models in Chicago, including both school-level and program-level costs?

Based on latest information, are schools financially sustainable to date and in future plans?

How would schools change their school models given declining budgeting scenarios?

What financial, operational or policy challenges or obstacles to success have schools faced during implementation of their academic models?

What would have made implementation more cost effective, or might make implementation more cost effective in the future/at other schools?

Can school models or components of schools' models be scaled in a cost-effective manner? What would it take to do so?

models and innovations

The goal of personalized learning is to customize the learning experience for each individual student, and this can be achieved in many ways. As such, the six models evaluated in this report are all very different, and they take into account the unique contexts of the students and communities they serve.

To develop these models, both cohorts of school teams were supported through an intensive design process, from foundation building, to implementation and iteration, to finalized plans for whole-school innovation. Throughout the process, teams developed a living "blueprint" – their plan for whole-school transformation – which evolved as teams grew in their thinking and received formative feedback from national experts. From Cohort 1 to Cohort 2, LEAP augmented the support programming for teams: extending the blueprint design process to 10 months, providing ~175 hours of one-on-one coaching for each school, adding an additional round of expert formative feedback, and making the blueprint itself more robust.

Blueprint elements included:

- Vision, Mission and Non-Negotiables
- Problem Statement
- Statement of Innovation
- Design Anchors
- Personalized Learning Strategies
- Pilot Plan
- School Systems Strategies
- Implementation Plan
- Change Management and Stakeholder Management
- Financial Implications

Final blueprints were evaluated for funding by national experts using an evidence-based rubric, with special consideration for evidence and integration of personalized learning, along with the overall degree of innovation. For Cohort 2, the evaluation process included a site visit to gather additional evidence.

Successful blueprints carefully considered school-wide personalized learning innovation from all angles, from **system-level changes** that enable personalized learning from a foundational standpoint, including scheduling, staff roles and leadership roles, to **personalized learning strategies** – changes in teaching and learning practices that lead to the personalization of the student experience.

System-Level Changes

In terms of system-level changes, many of the schools studied for this report have focused on innovating their core staffing structures. The most commonly used strategy is a teacher-leader model, in which teachers are elevated to leadership positions, compensated with additional stipends, and are sometimes supported by increased non-teacher instructional staff.

Some schools have been creative in finding low-cost solutions to increase instructional staff to supplement teachers, including utilizing student teachers through partnerships with local universities and colleges, partnering with Teach For America for summer training (which allows more summer learning opportunities), and hiring instructional aides or tutors to directly support teachers in classrooms.

All schools prioritize keeping student-to-teacher ratios (the number of students for every teacher) low. Five of the six schools had student-teacher ratios below 19.0 at the start of their personalized learning conversion and all six schools had student-instructional staff ratios below 16.0 at the start of their conversion. While these ratios are expected to increase with rising enrollment (assuming budget increases do not keep pace with salary and benefit increases), many schools are employing strategies to minimize this increase and/or to keep more instructional staff in the classroom.

Also interesting is the role and relative importance of technology in schools' plans and budgets. Discussions of innovation in education and personalized learning are often dominated by technology and its promises and perils. Some early blended learning models have relied heavily on it, diminishing the role of the teacher and emphasizing student engagement with playlists of apps and programs. Instead, in the six schools included in this report, technology costs represent a very small portion of school budgets, and maintaining low student-teacher ratios remains the highest priority. While technology costs are higher in year one of implementation, largely due to infrastructure improvements and device purchases, by year five in financial forecasts technology costs are projected to be nearly the same as costs prior to conversion. This may be driven by more strategic investments in technology, specifically guided by the schools' personalized learning plans. Devices, digital content and data systems, including learning management system are the most significant recurring technology investments.

Personalized Learning Strategies

To implement personalized learning, many schools anchored on common strategies, the specifics of which are tailored to the unique needs of each school community. Some of these strategies include personalized learning paths, through which students have some degree of choice in what they learn during a given class period, day or even week, how they learn the skills or content, and/or how they demonstrate mastery. These strategies tailor daily learning to individual student needs, as well as develop student agency and ownership.

Many schools also use project-based learning to this effect, through which students develop project-management skills, have the freedom to explore an interest, choose a mechanism to show what they've learned, and often build connections outside of school to complete it. Some schools also employ multi-age classrooms, where students are grouped according to strengths, needs and interests, rather than age, and teachers can better leverage their specific expertise.

Finally, many schools are also working toward competency-based education, in which students advance – throughout the year, and ultimately from year to year – based on demonstrated competency, rather than seat time. This is a fundamental change in the way the majority of U.S. schools and districts advance students, and its implications stretch across district policies, state and federal law, and college admission practices. In the Breakthrough Schools program, schools are starting with foundational aspects of competency-based education that are more straightforward to implement, including standards-based grading – reporting out on student progress toward specific and standardized objectives, rather than issuing letter grades. However, many schools plan to scale in the coming years toward more robust competency-based policies and practices.

LEAP Learning Framework

LEAP defines personalized learning through the LEAP Learning Framework, which anchors all of our work with educators. The core components of the LEAP Learning Framework are:

Learner Connected
Learning transcends location in relevant and valued ways, connected to families, educators, communities and networks

Learner Focused
Empower learners to understand their needs, strengths, interests and approaches to learning

Learner Demonstrated
Enable learners to progress at their own pace based on demonstrated competencies

Learner Led
Entrust learners to take ownership of their learning

school models

Critical Design Elements and Corresponding Key Resource Allocation Priorities

School A

Implementing personalized learning enabled through teacher expertise; in addition to the standard definition of personalized learning, also focusing on "connected spaces" (not just flexible), and focusing on supporting teachers as well as students; increased learning time is core to this model.

- *Learner profiles and personalized learning paths*
- *Extended learning time*
- *Evaluation of instructional tools and practice*
- *Teacher-requested software*

School B

Pursuing interdisciplinary project-based learning and standards-based grading; current focus is on staff capacity-building, particularly around integrating technology.

- *Technology (Chromebooks and Learning Management System)*
- *Freshmen Connections program*
- *Teacher prep time*

School C

Built around the four personalized learning pillars, this model is a multi-age, integrated classroom model with co-teachers supporting groups of up to 80 students. Strong emphasis on teacher-leadership with support from instructional staff.

- *Team teaching*
- *Teacher leadership*
- *Additional instructional staff support*
- *Flexible learning spaces*
- *Learner profiles and personalized learning paths*

School D

The vision for this model is full personalized learning for K-12, with an emphasis on integrated instruction (courses and co-teaching) and project-based learning, as well as focusing on multiple pathways to credit through competency-based education. The pilot began with integrated learning labs.

- *Project-based learning includes learning labs, transportation and use of community resources*
- *Additional roles for teachers*
- *Teacher stipends*

School E

This model focuses on proficiency-based learning as evidenced through standards-based grading with an eye toward true competency-based education in the future. Some elements of personalized learning, including flexible spaces, are not currently being pursued.

- *Standards-based grading system*
- *Additional teacher grading time*
- *Grading software*

School F

Building off of a previous blended/one-to-one initiative, this school is now implementing a teacher-leader, multi-age classroom model; teachers are supported by instructional support staff facilitating a rotation-model; focusing on student agency.

- *Additional instructional support staff*
- *Instructional technology (including 1:1 and software)*
- *Assistant principal role - focus on implementation*

the financial implications of innovation

Limitations of Analysis

While every effort has been made to ensure the validity of sources of information, and provide reliable findings, it must be noted that there are limitations of this analysis (as there are with most analyses). All analysis should be considered directional and guiding.

Most notably, the findings of this work are limited by the quality and accuracy of the data available. For example, some data used for analyses includes publicly available budget / planning data, which may differ from actual, and was not able to be verified as final through the Chicago Public Schools' published budget. Much of the data used, including the Five-Year Financial Plans, is self-reported and not verified by formal audit. Additionally, school-leader interviews, while important, do not provide a full range of perspectives on plans, risks, and opportunities.

Innovation began to take hold in Chicago during a time of great fiscal uncertainty. Before a budget passed in July 2017, Illinois had been without one for more than two years. School funding remained in jeopardy until a last-minute bill was passed more than a month later, overhauling how the state funds school and providing relief for Chicago's legacy pension debt and future pension payments. Despite this uncertainty, district leaders, school leaders and teachers across Chicago have taken the time, energy and initiative to prioritize, plan and implement new school models to better serve their students. Their leadership should be commended.

However, budget constraints are a very real barrier to continued and scaled innovation. In this report, we explore what it costs to get personalized learning models up and running, what it costs to sustain them, and how durable they will prove in the face of budget cuts.

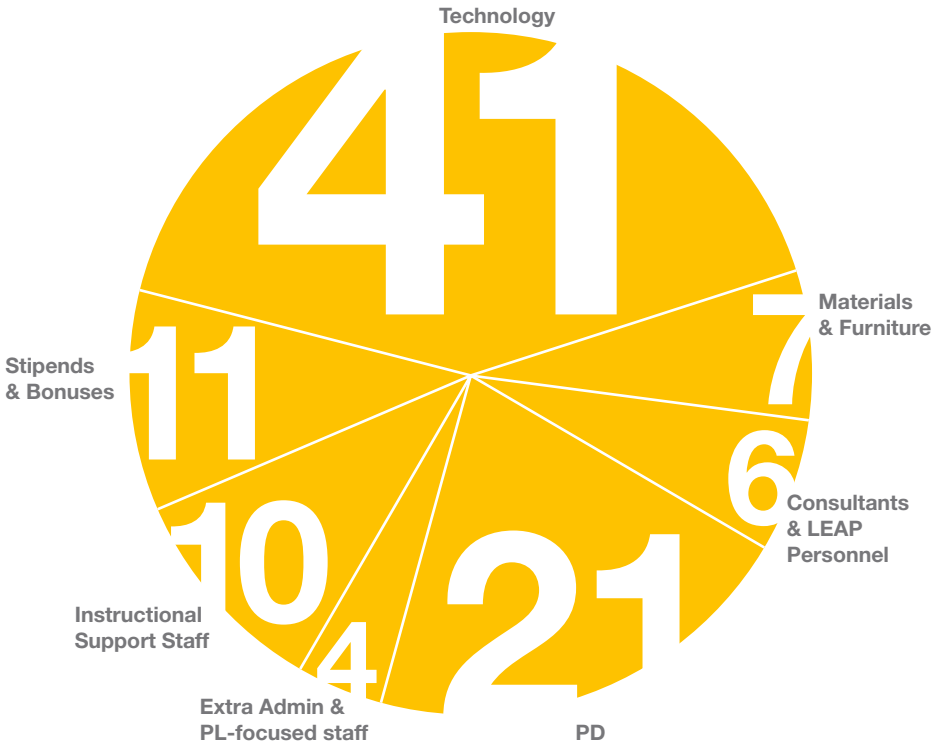
Getting Started

We've found that small upfront investment – just one to seven percent of total per pupil funding – can result in lasting personalized learning innovations. Start-up costs enhance and expedite implementation of personalized learning models, and are often funded through one-time funding sources. Start-up costs, as they pertain to personalized learning, are defined as expenses or investments above and beyond typical spending to operate a K-12 school, or investments required to convert from a traditional model to a personalized learning model. For the first cohort of Breakthrough Schools, planning grant awardees received $100,000 grants, and subsequent implementation grant awardees received $263,000 grants (awarded in installments based on milestones). For the second cohort of Breakthrough Schools, planning grant awardees received $30,000, and subsequent implementation grant awardees received $280,000 grants (awarded in installments based on milestones). Some schools in this study secured other start-up funding in addition to the Breakthrough grants. **In total, start-up funding ranged from $338K to $780K across the six schools, and $233 to $1,135 on a per pupil basis. LEAP planning and implementation funding and in-kind services accounted for nearly two-thirds of total start-up resources.**

start-up costs breakdown by school

This level of funding, while impactful, is relatively small compared to total school budgets. For example, LEAP grant funding (both planning and implementation grants) is between 3.4 percent and 5.6 percent of each school's annual school-directed budget (e.g. excluding in-kind central office services). LEAP grant funding accounts for less than one percent of a school's controllable budget over five years.

uses of funds by category



Like resource allocation decisions in general, uses of start-up funding are unique to each individual school's model. However, the most common include:

Technology: including software trials and devices

Professional Development: in the forms of planning time, substitute costs, external consultants, and travel to site visits

Instructional Support Staff: Carved-out positions to specifically support planning and implementation. For example, a certified teacher was freed up to provide in-classroom coaching in one school, and an IT manager is being hired at another school to design an in-house learning management system.

Stipends and Planning Team Salaries: One-time stipends for teachers leading planning and implementation

Dedicated planning time helped schools utilize this money successfully. Previous studies of actual versus planned investments with Next Generation Learning Challenges national grantees have shown that more advanced planning leads to smarter investment decisions.[8] In this analysis, schools with a year or more to plan had actual results closer to their plans than schools with less than a year to plan. Schools in Breakthrough provided anecdotal evidence of spending three or more years in gradual preparation – including culture building and intentional staff turnover – to prepare for their implementations.

Grant funds undoubtedly enhance planning and lead to stronger implementation. In discussions for this report, all principals indicated that they would have planned to transition to and support their personalized learning visions without grant funding, but expected implementation would be much slower or much less effective without grant program support.

In addition to grant funding, all principals emphasized the importance of the LEAP program, including in-kind services, in garnering excitement for, supporting the planning of, and expediting the transition to personalized learning. In particular, recipients saw the prestige, recognition, and pride elements of winning a grant program as essential to the energy around personalized learning in their schools. They cited cohort building, out-of-school "think time," access to experts, and visits to other innovative school models as critical to their success.

Enabling Personalization and Sustainability – Flexibilities and Trade-Offs

The key to school-level sustainability of personalized learning is the principal's ability to discern what elements have made the school model successful, and then ensure budgetary decisions align to protecting and promoting those elements. Because every Breakthrough Schools model is designed to meet the unique context and needs of the students and communities they serve, it is fundamental that principals are able to discern for themselves or have the support to help them identify what makes their model work, understand the budgetary and financial policy levers at their disposal, and then align financial investments – both one-time and recurring – accordingly.

Some principals made difficult trade-off decisions to support their personalized learning model. Resources are limited, and as new models drive new needs, some previous investments must be rationalized. Tradeoffs can be visible changes in resource allocation decisions. An example of this is no longer investing in textbooks and investing instead in software programs and online content. Sometimes, however, tradeoff decisions are not visible in financial statements, but are simply reprioritization of effort/focus within existing resources. This may be reprioritizing the work focus of existing positions, or may be a different use of existing non-personnel resources.

Key flexibilities to enable trade-offs and other budget prioritizations include:

budget

Ability to shift resources between personnel to nonpersonnel, and categories within each

e.g., purchasing instructional software instead of textbooks

staffing

Ability to staff according to the school's needs, rather than requirements

e.g., reclassify a prep teacher to create a project-based learning coordinator position

position description

Ability to change the responsibilities of a position

e.g., utilizing a special education teacher for case management to free up counselor time for social-emotional learning needs

scheduling

Ability to adjust the master schedule to accommodate unique design elements

e.g., scheduling a learning lab block of time covering both STEM and literacy

procurement

Ability to purchase and use resources necessary for the innovative model in a timely and cost-efficient manner

e.g., purchasing non-traditional grading software to revamp the high school grading structure

These enabling conditions are fundamental, but they are just the beginning. Improper identification of key design elements, or inability to connect key design elements to resourcing needs, can result in ineffective or inefficient use of limited funding. Likewise, poor understanding of available flexibilities, or unwillingness to use them, stifles innovation and can impede implementation progress.

However, in the schools studied for this report, identifying key design elements, connecting these to budget priorities, and using flexibilities effectively were evident. For example:

1. Funding for administrative/leadership support positions – most schools note the role of the principal as vision-setter and capacity-builder, and were clear that implementation requires additional leadership capacity. Most schools use their staffing flexibility (and in some cases, position description flexibility) to create and staff a new leadership position to guide day-to-day implementation. In some cases, this is an administrative position, and in other cases it's the establishment of a teacher coordinator or teacher leader.

2. Minimizing teacher attrition – all schools emphasize the criticality of on-boarding teachers, and have made significant investments in teacher development accordingly. Budget cuts could cause loss of on-boarded teachers (depending on the severity of budget cuts), and therefore most principals are prioritizing teacher retention, and expect to protect student/teacher ratios above all else in pending budget scenarios. This demonstrates a strong understanding of key design elements and making resulting budget decisions accordingly.

3. Creating teacher-leader positions, and providing incremental compensation if possible – three schools have identified teacher leadership as critical to their model. These schools have moved away from traditional staffing approaches and adopted team-teaching models. Teacher leaders in these models have been identified, and all of these schools are actively seeking to compensate their teachers for their increased responsibilities, mostly through stipends. As previously mentioned, because current compensation policies do not allow for teacher pay changes for leadership roles, salaries and benefits do not reflect this additional work. Not only did principals understand and use their budget flexibilities to accomplish this, they also used staffing and position flexibilities, as well as, in at least one case, sought waivers to more formally raise salaries rather than provide stipends (which are more short-term in nature than a base salary increase).

Staying Sustainable

To project the sustainability of the Breakthrough Schools over time, and in the face of budget cuts, Afton first interviewed principals to understand the key components of each model. Next, principals answered questions regarding how model implementation led to changes in resource allocation, trade-off decisions made or planned, and use of external supports received from LEAP and other organizations. A discussion on financial, operational, and policy challenges followed. Principals then outlined potential impact of budget reductions.

From the data gathered in these interviews, Afton updated five-year financial plans and ran new financial scenario analyses taking into account various revenue levels. With expenses in place, they calculated how 10 percent, 20 percent and 30 percent reductions to projected general funding would impact the sustainability of each school model. Once these amounts were determined, they used information from the interviews to identify possible mitigation plans to meet various budget levels. The analysis that follows reflects the "worst case" budget scenario of a 30 percent reduction in general funding.

While schools are concerned about upcoming budget reductions, all are committed to continuing their strategic personalized learning work regardless of funding level. In general, in the face of budget cuts, principals in the study plan to cut expenses in the following order:

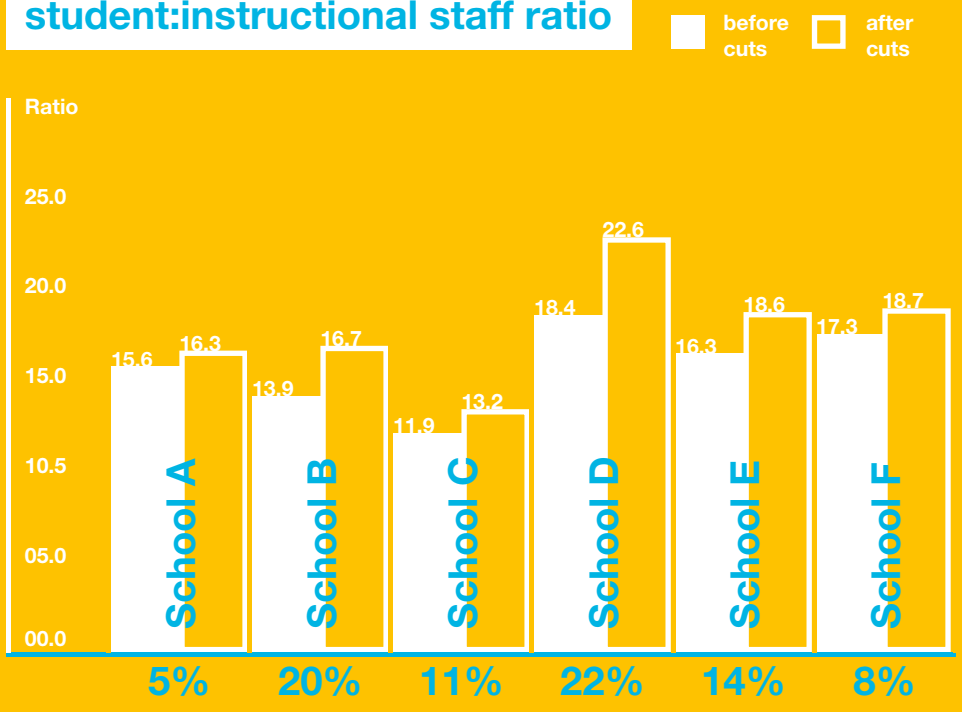
1. Administrative staffing
2. Non-personnel spending, including technology
3. After-school and elective programming
4. Instructional support staff (with one exception)
5. Teaching staff (with one exception)

It's worth emphasizing that, with one exception, cutting teaching staff is a last and final resort. Overall, some schools are better able to hold student-to-teacher ratios in the face of budget cuts more constant than others. This is due to their ability to make cuts in other areas, typically because their resources are allocated in a more diverse manner.

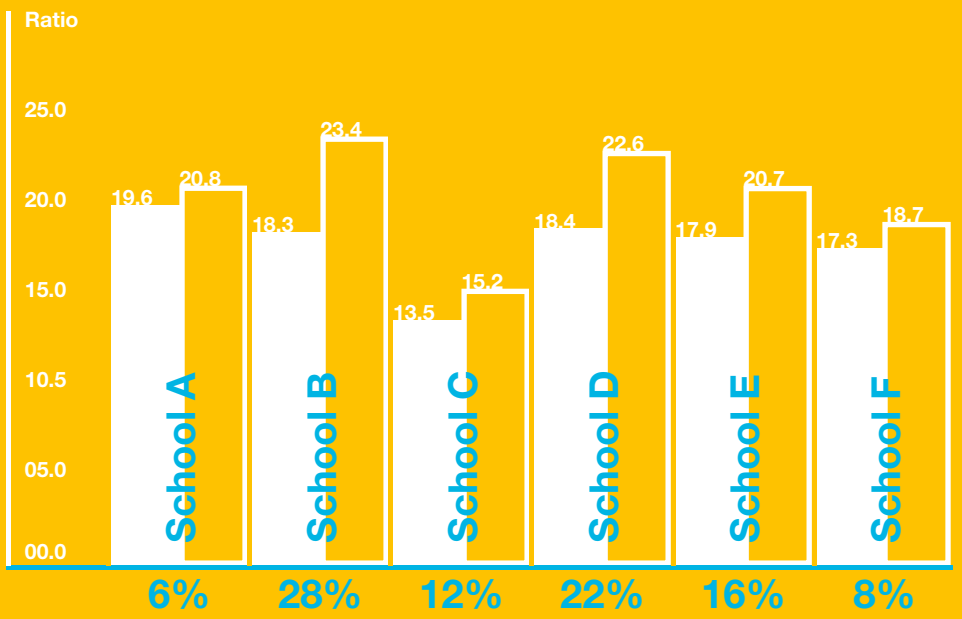
The innovative features of the models actually contribute to their sustainability. In a traditional school model, once all administrative and non-personnel spending is cut, the only option to meet significant budget reductions is to increase class sizes, perhaps substantially. Breakthrough Schools models in the study that utilized multi-age classrooms with teacher-leadership models proved most durable in the face of budget cuts, and were better able to maintain low student-to-teacher ratios. Based on all budget reduction decisions, School C and School F, which utilize multi-age classrooms, were able to hold student-to-total-instructional-staff ratios most constant without impacting a significant design lever, as School A must do.

There is an important tradeoff decision here though – the schools that are able to minimize student-to-teacher ratio increases are the ones that had somewhat higher student-to-teacher ratios to begin with. For schools that start with a lower student-to-teacher ratio, a larger proportion of their school funding is invested in teaching positions. Therefore, cuts must come heavily through teacher reductions, driving up the student-to-teacher ratio.

student:instructional staff ratio



student:instructional staff ratio adjusted for paraprofessionals



Note that the chart showing student-to-instructional-support-staff ratios includes a significant level of paraprofessionals in some schools, who are primarily associated with Special Education Individual Education Plans and are not eligible to be cut for general funding cost savings. This particularly impacts School A, School B, and School E.

When paraprofessionals are removed, evidence of reliance on non-teacher instructional staff at School C and School F becomes more clear, as these two schools have the lowest ratios and are able to maintain them with budget cuts. Because of the lower cost of non-teacher instructional support staff, the blended salaries and benefits rates are substantially lower than other models, allowing for more adults in classrooms – with the significant tradeoff that not all of these positions are certified teachers.

It should be noted that all schools, even those most adaptable to a hypothetical 30 percent reduction, have risks to durability. All schools would be making significant cuts to important resources, and there would be risks to their ability to continue operating at such a reduced budgetary rate for multiple years. In this projected scenario, all schools would significantly cut nonpersonnel spending, but it is unlikely that programs could be sustained for multiple years at such low nonpersonnel spending. In particular, schools would be unable to refresh technology. Also notably, all schools would significantly cut administrative positions. While this may be manageable for the short term, it is unlikely that schools could continue operating and meeting all requirements with such low administrative staffing for many years.

Generally, vulnerability of personalized learning models under budget cuts is comparable to that of traditional CPS schools. However, we also found that in some cases, personalized learning models create resource allocation and staffing structures that allow for cost reductions to happen in ways other than simply increasing class size.

Ultimately, schools pursue innovation to improve outcomes for their students. **The fact that school leaders and their teachers can completely rethink approaches to teaching and learning, integrate new strategies and best practices from national experts, and produce models that both personalize the learning experience for all students and operate under the same sustainability restraints as traditional Chicago Public Schools is remarkable – and incredibly promising for scale.**

recommendations

Improving Cost Effectiveness of Personalized Learning

Personalized learning is not a cost-savings initiative. However, there are opportunities to make personalized learning models (like any school model) as cost-effective as possible. The following recommendations may improve the cost effectiveness of the multiple model variations of personalized learning studied in Chicago schools:

1. Ensure principals understand the flexibilities – financial and otherwise – at their disposal. As noted above, one crucial factor to financial sustainability is the school leader's ability to discern what elements have made the school model successful, and then utilize the flexibilities at their disposal to ensure budgetary decisions align to protecting and promoting those elements. Principals who understand how to use their budgets, make tradeoff decisions, and be creative in staffing to meet their unique model's needs will likely get the most value out of their investments and eliminate unnecessary costs.

2. Review compensation policies and consider a pilot of a compensation structure supportive of teacher-leadership models. As previously discussed, multiple schools noted the inability to compensate for teacher leadership as a challenge to long-term success. Pursuing the development of a pilot in partnership with school unions to design, implement and evaluate changes to the teachers' bargaining agreement on traditional compensation structures (track, step, and lane, as well as advanced degree compensation) could provide valuable feedback for future consideration, as well as provide more effective use of resources at the pilot schools.

3. Ensure cost- and time-effective procurement. Every principal interviewed noted some level of pain or frustration with procurement policies and processes that were not attuned to the needs of innovative models. Improvements in procurement could improve cost-effectiveness both through dollar savings as well as through time savings from school-level administration, which is already stretched very thin.

4. Support efficient evaluation, selection, and payment of effective software programs. All schools are investing or planning to invest in educational software programs to support their tech-enabled personalized learning plans. Based on industry-wide research and precedent, there are likely cost efficiencies to be gained through supporting schools in taking stock of programs already purchased, reevaluating needs, and monitoring program usage over time. There may also be an opportunity to negotiate for better pricing should multiple schools be using the same software.

5. Pool resources for common unmet needs. While school autonomy is key, there are also opportunities to collaborate to create or purchase resources that meet common needs. One particular area worthy of investigation for resource-pooling is the development or procurement of a Learning Management System (LMS). Most principals noted that finding an LMS that meets their needs has been very challenging, which is consistent with feedback we hear from other innovative principals across the country.

6. Be strategic in providing grant funds or additional funding. Research shows that schools will spend funding that is allotted to them.[9] Requiring a detailed explanation of how grant funding or other additional resources will be used prior to providing it, as part of a longer-term sustainability plan, makes it is more likely that schools will be strategic in their investments. It also makes it more likely that funding will be invested in high value items (recognizing, of course, that changes will likely be necessary). Afton has consistently recommended implementing a best practice of developing, implementing and monitoring long-term (five-year) financial plans that demonstrate how models will remain sustainable after grant-funding expires, preferably on recurring public dollars.

Scaling Personalized Learning Models

Lessons learned in Chicago can benefit districts across the country. In order to scale personalized learning in a sustainable way, we recommend the following approaches:

1. Facilitate rather than mandate. When considering scale across a district, change must be "ground up." It cannot be a top-down mandate. Culture is a critical enabler, but it can be facilitated through learning opportunities and, from a financial perspective, supporting principals in understanding the flexibilities at their disposal.

2. Continue supporting the development of schools that have piloted personalized learning. In contemplating scale, it is helpful to remember that many existing personalized learning schools are still piloting, have not yet fully implemented their model, and continue to need strategic supports to be successful – they have not yet "arrived." These schools need to be supported to continue their learning and progression, as well as to demonstrate possibilities to other schools that may follow. In particular, providing coaching and feedback on implementation, as well as providing guidance on better use of resources, is recommended. Additionally, over time, these emerging models must be codified and evaluated to determine which models and strategies are having the most positive impacts, and in what contexts.

3. Provide strategic, coordinated financial and in-kind supports for future school cohorts. Districts across the country, along with ecosystem partners, can create the conditions for successful personalized learning growth and implementation through ways such as the following:

a. Focusing on cultivating and retaining talent, as well as principal leadership
b. Providing principals with the knowledge and autonomy needed to develop and sustain personalized learning models
c. Providing expert implementation support (on location), in addition to offsite professional development
d. Encouraging and facilitating local site visits
e. Creating a network of personalized-learning-focused principals for idea sharing, and for identifying long-term policy implications. This could be up to and including creating a formal network carved out of the traditional district network structure, with a focus on personalized learning implementation. This may lead to more effective, aligned professional development and knowledge sharing. It would also create a forum for understanding requisite policy and process changes.

4. Coordinate efforts to continue identifying challenges to innovation. Utilizing the lessons learned by principals engaged in the innovation process is critical. Ensure there is a consistent and accessible forum for gathering feedback on pain points and roadblocks to innovation. Also, ensure there is an empowered individual or team at the district level to gather, assess, track, raise, direct, and manage resolution of identified issues, as well as facilitate best practice sharing and cohesion.

5. Develop coordinated plans to address significant identified financial, operational, and policy challenges. Focus on systemic issues that will affect the majority of schools. A particular item of note is addressing teacher compensation structures that limit teacher leadership compensation. Also, thinking more long-term, determine what time and space constraints may need to become more flexible for the most innovative ideas around Learner Connected strategies to be more reachable.

Additionally, to create learning pathways for students that are truly personalized, we must address the grading and seat-time requirements that impede the implementation of competency-based progression. This is an immediate concern for the schools included in this report that are incorporating standards-based grading, an important component of competency-based progression, and a slightly longer-term concern for adopting other competency-based practices in schools across the city and the state. Fortunately, Chicago Public Schools is one of ten districts in Illinois taking part in a pilot that allows high schools to participate in competency-based progression. Six CPS high schools will participate, including two Breakthrough Schools, beginning with the 2018-2019 school year.

Finally, to truly take personalized learning to scale, we must rethink what what assessment and accountability look like. In most districts, teachers are evaluated at least partially by student performance on standardized tests. The nature of most standardized tests – evaluating student performance at one moment in time, via one specific modality, and at a grade level that may not match a student's true skill set – doesn't capture a holistic snapshot of student progress, nor do they capture important non-academic skills like agency, collaboration and grit. As a field, we must work together to find additional methods of assessment that better support a personalized, student-centered approach to education.

Citations

[1] Chicago Tribune, “Editorial: The rising trajectory of CPS graduation rates,” 2017; available online at http://www.chicagotribune.com/news/opinion/editorials/ct-edit-graduation-rate-cps-0904-20170831-story.html; last accessed January 2018

[2] The University of Chicago Consortium on School Research, “The Educational Attainment of Chicago Public Schools Students: 2016,” 2017; available online at https://consortium.uchicago.edu/sites/default/files/publications/Educational%20Attainment%20of%20Chicago-Oct%202017-Consortium.pdf; last accessed January 2018

[3] Future Ready Schools; available online at https://futureready.org/about-the-effort/; last accessed January 2018

[4] Benjamin S. Bloom, “The 2 Sigma Problem: The Search for Methods of Group Instruction as Effective as One-to-One Tutoring,” 1984; available online at https://www.jstor.org/stable/1175554?seq=1#page_scan_tab_contents; last accessed January 2018

[5] The University of Chicago Consortium on School Research, “The Educational Attainment of Chicago Public Schools Students: 2016,” 2017; available online at https://consortium.uchicago.edu/sites/default/files/publications/Educational%20Attainment%20of%20Chicago-Oct%202017-Consortium.pdf; last accessed January 2018

[6] Chicago Tribune, “SAT scores show vast disparity among Illinois high schools,“ 2017; available online at http://www.chicagotribune.com/news/local/breaking/ct-met-illinois-school-report-card-20171030-story.html; last accessed January 2018

[7] Chicago Public Schools, “PARCC Performance Levels and Sub-scores Report,” 2017; available online at http://cps.edu/SchoolData/Pages/SchoolData.aspx; last accessed January 2018

[8] Center for Reinventing Public Education with Afton Partners, “Financing Personalized Learning: What Can We Learn From First-Generation Adopters?” 2016; available online at https://www.crpe.org/sites/default/files/blfinance_4.2016_final_1.pdf; last accessed January 2018

[9] Center for Reinventing Public Education with Afton Partners, “Financing Personalized Learning: What Can We Learn From First-Generation Adopters?” 2016; available online a thttps://www.crpe.org/sites/default/files/blfinance_4.2016_final_1.pdf; last accessed January 2018

About LEAP Innovations

LEAP Innovations is a national organization headquartered in Chicago that connects innovation and education to transform how students learn. LEAP works directly with educators and innovators to discover, pilot and scale personalized learning technologies and innovative practices. In three years, LEAP has worked directly with more than 90 schools across Chicago to implement personalized learning, from classroom-level innovation in the Pilot Network to whole-school transformation in Breakthrough Schools. LEAP's work is anchored by the LEAP Learning Framework, a suite of resources that educators across the country are using to define, design, and implement personalized learning models. Visit leapinnovations.org for more information.

About Afton Partners

Afton's vision is that all of America's public education organizations are using financial strategies, policies, and practices that sustain effective academic initiatives—allowing more students to succeed. Our services enhance financial acumen within public school districts and charter schools and create an alignment between academic priorities and nance that is otherwise missing in public education. Afton provides consulting services in the areas of sustainability planning, operational efficiency and effectiveness, and funding equity and fiscal transparency. Visit aftonpartners.com for more information.