Dissatisfied Yet Optimistic:
Moving Faster Toward New School Models

by[1]: Stacey Childress, **Aylon Samouha**, **Diane Tavenner, and Jeff Wetzler**

I. INTRODUCTION

What if every young person in America finished high school prepared and inspired to achieve their most ambitious dreams and plans? What if students were empowered and equipped to take control of their learning, and it was tailored to their individual needs and interests? How might we focus on more than scoring well on state tests and college entrance exams, helping students build habits and skills they need to achieve personal success throughout their lives? How might we design schools and classrooms that accomplish this? How close are we to having them, and what will it take to get there?

Today, you can visit almost any school or classroom in the country and find students who struggle. They can't read, write or calculate. They have a hard time sitting still, following directions, and getting along with others. If you are able to really talk with them, they will tell you in their own way that they know they aren't successful. They understand that the path of school that they are on isn't going to lead to the life – the economic opportunity, the personal and career options, or the happiness – they really want. Meanwhile, in these same schools and classrooms, you will also find students who can read, write and calculate, sometimes very well. They follow directions, do what they are told. When you talk to these students and their parents, the word you most often hear is "fine" – they're doing fine, they will be okay, they will turn out alright in the end.

We wake up in the middle of the night thinking about these children, all of them. We worry about them, and spend long days working hard to figure out ways to ensure that each one of them can learn how to read and write, to give them a path toward achieving their full academic and personal potential, and equipping them all with the opportunity to achieve their dreams. We could very easily spend the remainder of our careers working hard on these aims – only to find that our schools still produce no more than "fine."

In writing this paper, the four of us are choosing a different path. It is fueled by a deep dissatisfaction with the status of even our best schools, but also an extraordinary optimism that we can and will change them. We know that students are capable of so much, and so are our schools. Despite our hard work, we are far from realizing our full aspirations: classrooms, schools and systems where every student is joyfully realizing his or her potential.

But we are optimistic that there has never been a better moment to harness this potential. We know more than we ever have about how people learn, what motivates them, and what drives success and satisfaction in life and work. We have access to technology that can help students and educators create and pursue knowledge more effectively than ever before, technology that can even bring communities together. And we are beginning

[1] We are indebted to the following people, whose input and thoughtful feedback improved the clarity and strength of this paper: Jay Altman, Norman Atkins, Scott Benson, Andy Calkins, Betsy Corcoran, Kriste Dragon, Aimee Eubanks Davis, Brian Greenberg, Alex Hernandez, Dalia Hochman, Michael Horn, David Keeling, Todd Kern, Susan Patrick, Ted Preston, Arielle Rittvo, Joel Rose, Chris Rush, Bror Saxberg, Oliver Sicat, Veenay Singla, and Kim Smith. In addition, we are immensely grateful to Julie Petersen for significant writing and editing support throughout the process. Any errors or faults with the paper are our own.

to see glimpses of what's possible when schools embrace the challenge of entirely redesigning the way they meet students' needs and interests.

We (the four authors) have come together from overlapping but different roles in an effort to redesign schools. Our collaboration is grounded in a humble realization that individually we will never be able to reach the ambitious vision we share for America's children and that casual alignment won't get us there either.
We've come together to provoke explicit action. We hesitate to call it bold or radical because we believe that many of us are inclined in the direction we propose, but struggling with how to make it real. To that end, we are:

- Sharing a simple framework for our theory of change
- Opening a discussion about how to make it better
- Collaborating so that our efforts are deliberately aligned to the framework
- Inviting our peers, colleagues and partners to do the same

The foundation of our action is a realization that we need to change what we are patient and impatient about:

- **We must be far *less* patient about broadening our ultimate ambitions with students and developing effective ways of supporting and measuring those ambitions.** We know that measurable academic growth is an important indicator of students' preparation for success in the 21st century. However, personal growth also matters tremendously for students to realize their full potential in both the short and long term. By this, we mean that in addition to realizing their academic potential, students should be building critical habits of success from self-awareness to student agency and from drive to curiosity and empathy. Our schools must be designed to help students achieve this full range of outcomes that so many students, parents, employers, and learning scientists have said are critical to success and happiness. And we need reliable ways of assessing them, so that students, parents, policymakers and funders can hold schools accountable for these broader outcomes along with academic growth, and in ways that go beyond a compliance mentality.

- **At the same time, we must be far *more* patient about the investment (time, money, and energy) needed to design, build and refine fundamentally new models of schooling**. There is compelling evidence from other sectors and our own that suggests a different approach will lead to better outcomes and economically sustainable models. Specifically, we need to make larger and longer investments in a small group of innovators and engage in a robust and coordinated set of activities to identify and support early adopters of the innovators' designs. Furthermore, we must nurture effective improvement cycles across the groups and within each one individually.

In the rest of this paper, you will find:

- A vision for the future
- A theory of change for getting there
- Our invitation to courageous action

II. A VISION OF THE FUTURE

As many have pointed out[2], our current model of schools is a legacy of a historical system, which was created to address the shift from an agrarian society to an industrial one. This model was designed to take students from diverse backgrounds (many immigrants) and efficiently give them basic knowledge and skills, while also showing them what it means to be an American. Many call this model of schooling[3] the "factory model" because it was codified during the industrial revolution and follows the contours of a factory – blocks of students going down the conveyor belt of standardized subjects and grade levels to produce industrial workers. While this model of schooling was adequate or even strong for some students, it has consistently and unacceptably left behind many others -- especially students of color, low-income students, and students with learning differences.

Today, it is clear that this legacy model of school is insufficient for ALL students. Students live among an increasingly diverse and stratified population – with more than half of K-12 students a racial or ethnic minority, an English language learner, or from a low-income family. Increasingly, learners and workers engage on a global basis with those in other countries, in a competitive economy where content is cheaper than ever, advanced skills are growing in value, and change is the only constant. More students than ever before must be prepared for success in higher education -- as a critical link to good jobs and careers, but also, as MIT's Mitchel Resnick puts it, to create "a society of creative individuals who are constantly inventing new possibilities for themselves and their communities."[4]

Relative to these demands, our schools are far too often failing their communities and their students. For the last half-century, despite massive increases in school spending, national reading scores have remained level, graduation rates have stagnated[5], and our students have fallen behind their international peers.[6] As for students, a number of surveys show that between 85% and 95% of 8th graders across ethnicities and income levels say they plan to go to college. Fewer than 65% overall will enroll, and only 17% of low income students do well enough on college entrance exams to indicate they are likely to complete their programs. It's no surprise then that only 8% of students in the lowest income quartile go on to complete a degree within 6 years of high school graduation. In terms of career aspirations, 64% of high school seniors believe they will have a career as a working professional though fewer than 20% of them will. As authors Po Bronson and Ashley

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[2] See for example: John Sutter, "Why teaching is 'not like making motorcars,'" *CNN*, March 17, 2010, http://www.cnn.com/2010/OPINION/03/17/ted.ken.robinson/; Joel Rose, "How to Break Free of Our 19th-Century Factory-Model Education System," *The Atlantic*, May 9, 2012, http://www.theatlantic.com/business/archive/2012/05/how-to-break-free-of-our-19th-century-factory-model-education-system/256881/; Michael B. Horn and Meg Evans, "New Schools and Innovative Delivery," Wisconsin Policy Research Institute, May 2013, http://www.christenseninstitute.org/publications/new-schools-and-innovative-delivery/; and Frederick Hess, "There's Nothing Especially Educational About Factory-Style Management," *Education Week*, April 9, 2014, http://blogs.edweek.org/edweek/rick_hess_straight_up/2014/04/theres_nothing_especially_educational_about_factory-style_management.html

[3] By school "model" we mean every aspect of the student, staff, family, and community experience -- aims, use of time, facilities, roles of teachers, community culture, instructional practices, assessments, etc.

[4] Mitchel Resnick. *Rethinking Learning in the Digital Age*. 2002. https://llk.media.mit.edu/papers/mres-wef.pdf

[5] Arthur Peng and James Guthrie, "The Phony Funding Crisis," *Education Next*, Winter 2010. http://educationnext.org/the-phony-funding-crisis/

[6] "Does money buy strong performance in PISA?" *PISA IN FOCUS*, February 2012. http://www.oecd.org/pisa/pisaproducts/pisainfocus/49685503.pdf

Merryman put it, “Clearly we’ve engineered students to have inflated hopes, but not actually equipped them with the skills to succeed.”[7]

American young people deserve a better model of schooling. Creating it requires us to rethink the way we design and operate schools. We cannot simply change one piece, such as standards or curriculum, or to add on a few new programs. Such “point solutions” can make an important difference, but usually in narrow or isolated ways.They do not add up to radically different outcomes for all students, because for any one element to work well, it must work in concert with all of the other pieces. As Leah Hamilton and Anne Mackinnon of the Carnegie Corporation of New York have put it:

> *By purposefully integrating many of these advances in a comprehensive school design, much more can be accomplished than applying each individually. When the best practices around what we know works in schools are combined to create intentional new school designs that leverage talent, time, money, and technology to meet the needs of each individual, it produces powerful results.”*[8]

We believe we must create entirely new school models. These schools of the future should:

- Start with **learning goals that are broad, deep, and interdisciplinary** across academic, cognitive and social-emotional aims; and, hold the **highest of expectations for <u>all</u> students** to meet these ambitious goals
- **Give students the freedom and power** to own their learning, choosing the pace and modalities that work best for them, in service of *their* goals
- **Personalize the learning experience** to meet every student based on where she is, what she needs, and her goals and strengths
- Equip **parents to be active partners** with the school and with their children
- Foster **a community of togetherness**, with diverse groups of students, educators, and parents constantly sharing and working together

We can accomplish these aspirations by:

- **Reimagining the roles of educators**, with different people wearing different hats based on specialized strengths or expertise, combining in different ways at different times
- **Rethinking the use of time and space**, to break free of traditional boundaries and constraints
- **Leveraging technology** as a backbone that enables all of the above and enhances – not replaces – human interactions
- **Embracing continuous learning through rapid iteration**, refining and redesigning as we learn more and more

We developed a more complete description of these attributes and contrasted them to features of the current factory model of schooling in Appendix A of this paper.

Such dramatic redesign reflects the growing ambitions of young people and their families, community members, businesses, and educators across the country. “The current system’s one-to-many approach to teaching, standardized curriculum, age-based cohorts, and classroom-contained instruction are all limitations

[7] Po Bronson and Ashley Merryman, “On the Consequences of Self-Esteem & Innate Smarts,” Nurtureshock blog, February 2007, http://www.pobronson.com/blog/2007/02/on-consequences-of-self-esteem-innate.html

[8] Hamilton, Leah and Mackinnon, Anne. “Opportunity by Design: New High School Models for Student Success.” New York: Carnegie Corporation of New York. Spring 2013. http://carnegie.org/fileadmin/Media/Programs/Opportunity_by_design/Opportunity_By_Design_FINAL.pdf

on our children's opportunities to learn and thrive in this changing world," note the authors of *Re-imagining Education: A Transformational Vision for Education in the US*, whose co-signers include principals, foundation leaders, corporate executives, and the presidents of the American Federation of Teachers and the National Education Association. Like us, they are optimistic:

> *We see a paradigm shift—from the Industrial Age's school-centric paradigm to a new learner-centered, network-era paradigm … a shift of perspective that places every learner at its center, structures the system to build appropriate supports around him or her, and acknowledges the need to adapt and alter to meet the needs of all children.*[9]

We agree. Let's entirely redesign how we do school and aim for an expanded definition of student success.

III. A THEORY OF CHANGE FOR GETTING THERE

This section consists of several components:

- Our diagnosis of why the fundamental design of school has not changed over decades
- The changing conditions that make us optimistic that now is the time to ignite fundamental innovation
- Our beliefs about how change will come about in the coming years
- Early evidence we see of those beliefs playing out in reality

Why the fundamental design of school has not changed over decades

We are nowhere near the first people to note the limitations of the factory model. In fact, people across time and philosophical spectra – educational and political – have highlighted the limits of the factory model. As far back as 1912, Frederick Burk commented that schools are:

> *...constructed upon the assumption that a group of minds can be marshalled and controlled in growth in exactly the same manner that a military officer marshalls and directs the bodily movements of a company of soldiers. In solid, unbreakable phalanx the class is supposed to move through all the grades, keeping in locked step. This locked step is set by the 'average' pupil–an algebraic myth born of inanimate figures and an addled pedagogy. The class system does injury to the rapid and quick-thinking pupils, because these must shackle their stride to keep pace with the mythical average. But the class system does a greater injury to the large number who make slower progress than the rate of the mythical average pupil . . . They are foredoomed to failure before they begin. Could any system be more stupid in its assumptions, more impossible in its conditions, and more juggernautic in its operation?*[10]

Nearly a century later, British education expert Ken Robinson made similar observations:

> *We have a system of education that is modeled on the interests of industrialism and in the image of it. We still educate children by batches, as if the most important thing about them is their date of manufacture. If you're interested in a model of learning you don't start from this*

[9] Convergence: Center for Policy Resolution. *Re-imagining Education: A Transformational Vision for Education in the US*. November 2014.

[10] Charles E. Silberman in his book Crisis in the Classroom, cited in https://medium.com/the-exofiles/why-dividing-us-by-age-in-school-doesnt-make-sense-c6d1b5d79f0c]

production line mentality. Essentially it's about conformity…and increasingly…about standardization.[11]

In November 2014, a broad group of educators, business people, scholars, and funders released "Re-imagining Education," a paper proposing a new vision for the future. A wide range of views were at the table; for example, the group included a school leader from KIPP, the head of a national charter school advocacy organization, representatives of investors such as New Profit, Inc., and the elected presidents of the two national teachers unions jointly recognized that:

> *We have inherited this system, which is based on a standardized factory model...Despite teachers' best efforts to individualize along lines of difference, opportunities to tailor the content, pace, and method of instruction are limited...Many students are ushered on despite insufficient and limited understanding…[and] others are often denied the opportunity to explore beyond the grade's standardized curriculum.*[12]

These are only a few of many quotes we could have cited from over the decades. However, **despite this widespread agreement about the insufficiencies of the factory model, it has been persistently difficult to change, even among our "highest performing" schools. Why is that?**

We believe that everyone within the system is working incredibly hard, yet they each face practical dilemmas that make it challenging to fundamentally transform schools and systems. Specifically:

- Teachers often relish the opportunity to innovate and serve their students better, but struggle to reconcile new approaches with existing requirements -- not to mention limited time and resources.
- Principals and system administrators, burdened by the overwhelming task of running schools on a day-to-day basis, face these same challenges. Without demonstrated alternatives to their existing designs and the supporting practices and tools that would make it possible to move to a new model, they understandably feel forced to persist in their current approach rather than jeopardizing existing results and incremental progress with too much experimentation.
- Parents and students, steeped in the current paradigm of what school means and unfamiliar with viable alternatives, rarely push schools to be dramatically different or look for ones that are.
- Funders want better results, but many let their desire for existing "evidence" get in the way of also placing large bets on innovative approaches that could result in new evidence about effective designs and practices. As a result, they often push to scale up more familiar incremental practices that demonstrate smaller but reliable effect sizes using conventional -- and often narrow -- measures of success. This behavior reinforces the innovation dilemmas faced by teams of educators by rewarding modest change and rapid scaling of incremental improvement. Supporting innovative approaches with a portion of grant budgets while also investing in the spread of more traditional practices can work together as part of an overall portfolio of grants.

On its own, each of these dilemmas is challenging enough to overcome; together, they paralyze our ability to drive fundamental innovations and thereby perpetuate the status quo.

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[11] Ken Robinson animation *2009, https://youtu.be/zDZFcDGpL4U?t=6m34s]*

[12] Convergence: Center for Policy Resolution. *Re-imagining Education: A Transformational Vision for Education in the US*. November 2014.

Why now is the time to catalyze fundamental innovation in the basic design of schooling?

Despite the lack of progress to date in driving fundamental change to the basic design of schooling, the last decade has produced a number of necessary conditions that make us optimistic that the innovation we need is now more possible than ever before.Together, these conditions completely change the landscape of what is possible:

- Lessons from high-performing schools. Over the past decade-and-a-half, the emergence of high performing, "no excuses" schools -- often (though not exclusively) part of charter networks such as KIPP, Aspire, Achievement First, YES, and Uncommon Schools -- proved that, at scale, **all students can achieve at high levels** when given the opportunities they deserve. These pioneers have shown that with enough hard work, talented teachers and leaders, more instructional time, and alternative governance, the industrial model of schooling can produce sufficiently high levels of academic achievement to earn most students admission to college. Simultaneously, some of the school networks that have figured out how to consistently help all students score very well on state tests and college entrance exams are disappointed with the college persistence and completion rates of their students. **Educators are hungry for research-backed practices that support habits of success, social-emotional learning and the development of student agency as keys to enduring academic and personal success for all students.**

- Growing interest from mainstream schools and districts. In October 2014, President Obama announced Future Ready, an initiative of the the U.S. Department of Education. The effort is focused on inspiring and supporting school districts to create more personalized learning environments for students by incorporating education technology. Within six months, nearly 2000 public school districts took the Future Ready Pledge, indicating their commitment to the project. The level of interest is exciting, even though the capacity to make the shift is likely very different from place to place. If we can figure out how to harness the momentum, the **growing demand for new models could help spur change faster** than we have experienced with other types of reforms.

- Learning science. As Hess and Saxberg (2013) demonstrate in *Breakthrough Leadership in the Digital Age: Using Learning Science to Reboot Schooling*, we have seen **tremendous advances over the decades in the learning sciences**, though these are often underutilized in education practice. These advances have provided new insights about how students learn to read, write and reason, what learning differences mean and require, how memory works, and what contributes to learner motivation.

- Human centered design. Design science has been around for decades, but in the past twenty years it has attained a level of mainstream understanding and appreciation that has made it a practical and powerful tool for educators. Institutions like the Stanford Design School and firms like IDEO and WhatIf!? have codified and packaged methodologies in highly accessible and practical ways. Around the world, **educators are using "design thinking" to better understand problems in a human-centered way and generate innovative solutions**, often together with end-users.

- Better technology. Access to high speed bandwidth, devices and powerful software is cheaper and more ubiquitous than ever, and will only become more so. These factors have reshaped so many other industries - from taxis to hotels to real estate to banking - and are similarly poised to reshape education. Students, educators, and families can now have access to educational content from anywhere in the world, instant feedback, real-time data, and even new sources of community. **Entrepreneurial teams**

with world-class education and engineering talent are capitalizing on these dynamics, creating breakthrough courseware and platforms to support new school models.

Out of all these conditions and more, we are already seeing educators around the country taking steps – even in small-scale ways – to try new approaches, whether flipping classrooms, blending learning so students progress at their own pace, trying new staffing models such as high-dose tutoring, blurring the boundaries of school walls and communities, empowering students to develop and pursue projects that matter to their communities, just to name a few. Through this, teams of educators are showing what's possible when we begin reimagining the traditional model of schooling. And a small set of "innovators" is emerging from this group, who are more fundamentally rethinking every aspect of schools, capitalizing on all that's possible.

A Theory of Change: What it will Take to Redesign Schooling over the Next Decade

Everett Rogers developed an adoption curve to explain how new innovations spread through a community. A few radical "innovators" (2.5% of the total "market") create the solutions, and a group of "early adopters" take them up (13.5% of the total "market").

Figure 1: Innovation Adoption Curve[13]

Our theory of change builds on this idea and focuses deeply on the bold teams of educators in this combined 16%, who we believe have the vision and track record to imagine *and* deliver on new school models:

Our theory of change posits that:

- ➔ *Innovators*: IF visionary teams of educators have sufficient time, design talent, and money to innovate and iterate, THEN they will build breakthrough models that transcend the limits of today's paradigm.
- ➔ *Early adopters*: IF models developed by innovators a) create dramatically better outcomes on a broad definition of student success, and b) are designed to be easy for others to implement, THEN early adopters, with modest design, implementation, and financial support will take up these models -- in part or in whole -- in their own districts and school networks. The set of early adopters is also a breeding ground for new innovators, who want to push the bounds beyond what currently exists.

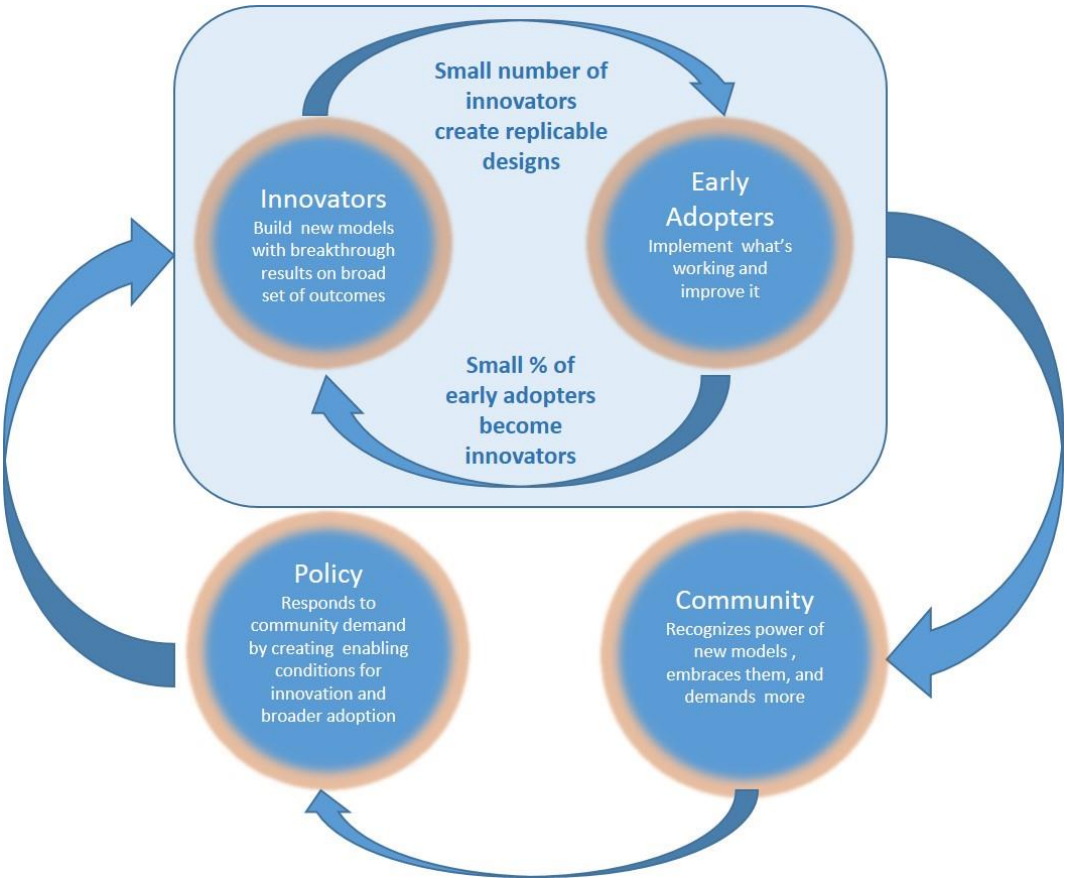
[13] For more on the path that innovation takes in education, see Everett Rogers' *Diffusion of Innovations* and Geoffrey Moore's *Crossing the Chasm: Marketing and Selling High-Tech Products to Mainstream Customers*; for a more specific application of these theories and others to education, see Clayton Christensen and Michael Horn's *Disrupting Class*.

- ➔ *Community demand*: IF those models prove results and students and families have meaningful exposure to them, THEN they will demand these new models of schooling (including the requisite policy conditions) with stronger outcomes for all students on an expanded definition of success

- ➔ *Favorable policy conditions:* IF the policy context is conducive to the features of the new models (e.g., competency-based approaches to credit, accountability system based on individual growth in academic knowledge and skills rather than absolute proficiency, as well as an emphasis on additional dimensions of student success such as collaboration, communication, agency, self-management, etc.), THEN more and more districts/schools will have the ability to adopt new models in response to increasing demand from families and communities, and more innovation will emerge

- ➔ *Virtuous cycle:* IF all of the above happen in continuous, mutually reinforcing cycles, THEN over the next 3-5 years, we will unleash unprecedented progress in driving and spreading breakthrough school models

Figure 2: New School Models Theory of Change



This theory of change depends on several key factors:

- Concentrated R&D funding. The first two components of this theory of change - innovation and early adoption - require some financial support beyond the per pupil funding most schools receive. In the innovator stage, this R&D funding enables fundamental rethinking, developing, prototyping, assessing, refining, and codifying (for others to adopt) of all components of new school models. As in all industries, this type of R&D requires significant capital. And as with all innovation, success is not guaranteed in every case or at every step, which means that multiple bets are required to yield a successful model. However, the bets need to be substantial enough to maximize the chances that:
    - fundamental rethinking can take place
    - teams have the resources to translate their vision into a strong design and build, study, refine, and codify it over a few years

  We estimate that breakthrough models will require $5M - $7M of R&D funding per model spread over four or five years. These deep investments in models will pay off if they are designed to operate on the public dollar after the R&D phase, and are spread across thousands of schools that can implement them with modest financial resources for customized implementation (around $150K per school)

- Design talent/capacity. Most school teams engaged in this work require additional capacity to develop, build, assess, refine, and codify whole school models. This capacity takes two forms:
    - "experts" who provide a robust link between accumulated in knowledge in critical disciplines and the work of designing and building schools -- including learning scientists, technologists, design talent, architects, data scientists, and instructional specialists.
    - "builders" who do the heavy lifting of developing out all elements of the school design, from instructional curriculum and assessments, to staffing models, to cultural rituals, to technology backbones, and so much more that is vital but often invisible for breakthrough designs to yield results.

  Without sufficient design capacity, we will see many great ideas but few that are translated into action in ways that yield replicable results.

- Codified lessons. As innovators and early adopters do their work, they will generate significant insights that have the potential to benefit each other and future pioneers. These lessons will include insights about the substance of the new models, the design process, and the change management required to bring new models into being. Capturing and sharing these insights in actionable and accessible ways will be vital for practitioners, communities, and policy-makers to understand what is required for the change to take hold and spread.

- New measures of broader outcomes. Our premise is that academic achievement alone is insufficient for students to thrive in and transform the 21st century. However, traditional measures of school success rely almost exclusively on student performance on standardized tests. To know whether innovative schools are succeeding along broader dimensions such as student agency, social-emotional learning, character strengths, and executive function, we need valid, reliable, and agreed-upon measures of these types of broader outcomes. This will accelerate the innovation process, both by demonstrating which school models are most successful and more visibly illuminating the insufficiencies of the status quo industrial model.

Early evidence of this theory of change in action:

One of the reasons we see promise in this theory of change is the early evidence from examples in the field. One of these is Teach to One™, operated by nonprofit New Classrooms, which emanated from R&D in New York City schools. The middle school math model currently serves 6250 students in 16 schools across six states and is demonstrating strong academic results. California's **Lindsay Unified School District**, whose work was enabled by a $10 million Race to the Top grant, has been working to redesign schooling since 2009; rather than advancing based on their age or the calendar, high school students in Lindsey progress to the next grade when they can demonstrate to their learning facilitator (teacher) that they've mastered their learning objectives using a range of evidence, such as projects or other assignments.

One of the attempts that goes the furthest toward full redesign is **Summit Public Schools**, a charter school network of nine schools in California and Washington State, led by one of this paper's co-authors, Diane. Summit didn't start out by redesigning their whole model, but rather by experimenting with new ways of meeting student needs in math with Khan Academy, which inspired broader redesign. "Summit came to believe that blended learning held the promise to not just improve math scores, but to unlock students' ability to own their own learning and succeed independently – just like they would have to do in college," notes an FSG case study on Summit's work. "They soon realized that giving students greater agency was not about a single program or facet of their model, but had to be a radical design principle for everything the school did."[3] Summit allocated significant resources toward deep research and development around every component of their school model, from the instructional content they needed, to students' schedules and the structure of the facility, as well as the personalized learning platform that supports teachers and students day to day. The table below maps Summit's story to each component of the theory of change:

Table 1: Summit Public Schools illustrating this theory of change

Components of theory of change	**Illustrative example: Summit**
Innovators IF visionary teams of educators have sufficient time, design talent, and money to innovate and iterate, THEN they will build breakthrough models that transcend the limits of today's paradigm.	After 10 years of operating, Summit Public Schools had a proven track record of success based on state test scores and college admissions data. In 2011, the leadership team embarked on a deep research and design journey to pilot, test, design, and ultimately build out a promising next-generation model that touches on every aspect of the student experience including student ownership, instruction, facilities, technology, staff development, and school culture. This shift required thousands of hours of dedicated design and build capacity from leaders and experts inside and outside the organization and $7.8 million of R&D investment to date.
Early Adopters IF models developed by innovators a) create dramatically better outcomes on a broad definition of student success, and b) are designed to be easy for others to implement THEN early adopters, with modest design, implementation, and financial support will adopt these models -- in part or in whole -- in their own districts and school networks	Summit's results have been promising in terms of students academic and personal growth and early adopters have been visiting Summit schools in droves to learn how to adopt the model into their own contexts. To meet this demand, Summit recently launched "Basecamp" as a way to provide early adopters deep access to the tools, curricula, training, and technology needed to adopt the model into new

	contexts. We believe that for a modest of investment of $200K per school, we will see the Summit model spread to 20+ communities in the first year.
Community Demand IF those models prove results students and families have meaningful exposure to them, THEN they will demand these new models of schooling with an expanded definition of success, higher expectations, and stronger outcomes for all students	In order to ensure that Summit's innovative model is not seen as an anomaly, we know that dozens and then hundreds of early adopters will need to successfully implement Summit's model and other innovative models. Islands of success can be dismissed; proof points across a myriad of contexts will create a movement. We also know we need many more models created by innovators like Summit
Favorable Policy Conditions IF the policy context is conducive to the features of the new models (e.g., competency-based credit, accountability systems based on growth rather than absolute proficiency etc.), THEN more and more schools will have room to adopt new models in response to increasing demand from families and communities	As a charter network, Summit enjoyed more favorable innovation conditions than typical traditional district schools who are held back by regulations that inadvertently perpetuate the traditional model. We imagine that the proliferation of models like Summit's along with the groundswell of demand will at first put pressure on existing policies, but over time they will shift to enable many more schools and systems to adopt these models.
Virtuous Cycle IF all of the above happen in continuous, mutually reinforcing cycles, THEN over the next 3-5 years, we will unleash unprecedented progress in driving and spreading breakthrough school models	Thus, a deep, focused design effort at Summit and others can catalyze a powerful cycle of innovation, adoption, parent demand, and favorable policy conditions that encourage more innovation and so on. The success of these initial innovation efforts animates this transformative shift towards schools that meet our highest aspirations.

Where will the next crop of innovators come from? One likely path is a lesson from the Summit story, and highlights the cyclical, iterative nature of innovation. Our view of what defines an "early adopter" is a team of educators who are dissatisfied with some aspect of their existing model, and picks up an approach or solution that was developed by an "innovator." Often this is a rather discrete activity, for example when Summit decided to use Khan Academy to help all 9th graders fill in gaps in their math knowledge, they were an early adopter of using the online math content in a blended classroom rotational model at scale in a school. The work of implementation and its successes and challenges opened the Summit team's eyes to other parts of their model that could be redesigned, and more importantly to how a new approach to instruction unleashed students' ability to own their learning. After a couple of years of redesigning components, they were ready to completely rethink their entire approach to high school. We believe a small but meaningful percentage of early adopters will similarly jump into the innovator category as their more limited redesign work leads to new insights and increased appetite and capacity for reinvention. Certainly some innovators will show up through different paths, but we believe many will begin as early adopters of the solutions developed by other innovators.

IV. OUR INVITATION TO ACTION

We believe that the conditions presented by this moment in time provide the potential for the United States to again excel in education. The world has changed dramatically since the design of the factory model of schooling. Just as we were successful at developing and proliferating schools optimized for the industrial age, we have the opportunity to lead the way again by establishing a new approach. One that prepares and inspires young people not only to thrive today, but to create their own path to success in a world of constant change. America led the way in developing the work environments of the 21st century, but we never aligned our schools to prepare our children for such environments. Now, we have the chance to do so.

Authors' Commitments to Support This Change:

Collectively, the four of us are committing to the following and we invite you to join us:

- We will pursue rigorous, measurable academic outcomes *and* personal growth that is difficult to package and measure -- habits, mindsets, agency. We will not be afraid of "backsliding" into a time when academic data was not used effectively; we know we can hold ourselves collectively responsible for both academic and personal growth.
- We will work to ensure that new school design and innovation does not align with any particular ideology or political agenda. We will work with educators, students and families from all backgrounds, community groups, policymakers, and funders to make sure that this effort is truly collective and reflects the aspirations and many diverse talents, perspectives, and voices we have as a broader community.
- We will remain convicted about the need to urgently pursue the theory of action we've described while being curious, open and adaptable as we learn what most works in reinventing school.

In addition to these collective commitments, we are also making personal commitments.

Stacey is an investor in teams of educators creating and redesigning schools and she commits to:

- Fund and support innovators and early adopters and tailor the size and timeline of investments and expectations for results in ways that are appropriate for each category.
- Collaborate with many educators, researchers, and funders to identify, tryout, validate, and coalesce around measures of personal growth.
- Generate concrete lessons across her team's investment portfolio and share those lessons in ways that are easy to understand and act on
- Think beyond the charter/district divide in order to ensure the majority of young people in the U.S. have a school in their neighborhood that works for them.

Aylon is a parent, school designer, and co-founder of *Transcend*, and he commits to:

- Engage in human-centered design to build school models that he would enthusiastically send his own child to attend. "If 'fine' isn't good enough for my kid, it's not good enough for anybody's kid."
- Work to provide a critical component of our theory of action by bringing the design/build talent, across disciplines to the work of building exceptional schools that can adopted by others.
- Ensure that insights from learning science -- academic, social-emotional, motivational -- are reflected in how we design and build schools.
- Bring a spirit of curiosity and optimism to a highly iterative and data-based process of designing and building schools.

- Openly share anything we design and build, our lessons learned, and our evolving process so that innovations reach students as quickly as possible.

Diane is the parent of a Summit student, the leader of Summit Public Schools and an active policy advocate and she commits to:

- Lead a network of public schools that are characterized by a drive to rapidly and continuously iterate towards achieving the aspirational vision shared in this paper
- Share Summit's work openly, honestly and freely to enable adoption and improvement, specifically through:
    - Tours of the schools
    - Publications
    - Web-posting and multi-media
    - Convenings
- Make freely available the tools and professional development Summit uses to support our school model, specifically
    - The Personalized Learning Platform (PLP)
    - The entire curated Summit curriculum and associated assessments
    - The Professional Development Platform (PLP Pro), currently in prototype
- Support efforts to develop, test and validate measures of personal development
- Advocate for local and federal policy and regulations that encourage and foster movement towards the new school models

Jeff is a parent, leader at Teach For America, board member for several education organizations, and co-founder of *Transcend*. He commits to:

- Continually challenge himself and others to ask if we're sufficiently questioning our traditional assumptions about schooling and thinking boldly enough about future possibilities.
- Champion efforts to fundamentally rethink the design of our classrooms and schools, wherever incremental change will not suffice for children.
- Ensure that students, families, and communities play a central role in the innovation process.
- Approach innovation with the lenses of diversity, equity, and inclusiveness front and center, mindful of the ways in which the design of schools has historically served to sort, separate, and oppress marginalized populations.
- Partner with a wide range of visionary education practitioners to build breakthrough school models that strive to exemplify these commitments. In the process, build a school innovation talent force for the sector and an actionable knowledge base that accelerates our collective progress along the innovation curve.

As ambitious as the commitments we four have made feel, together they will not result in the vision for schools and change we have put forth. Without partnership and alignment from many, many others we cannot succeed. There is so much, so many can do.

Educators can…

- Ask themselves, "Are my students today on a path towards truly fulfilling their potential and earning a wide range of options for thriving in life and transforming the future?"

- If the answer is anything but a wholehearted yes, then INNOVATE AND LEARN! Ask, “What can I be doing differently in my classroom or school or district to create learning models that fully engage, challenge, and support all students?”
- Look to innovators for examples - big and small - of ways to try new models of learning, rapidly test what works best for their students, and push on the traditional paradigms of schooling

Students and families can...

- Support thoughtful efforts by your local school to adopt innovative designs and practices even if they challenge your notion and understanding of school.
- Act in partnership with your school providing thoughtful, constructive “user-feedback”
- Hold high expectations for the privacy of student data, while supporting the appropriate use of the data to drive design iteration and improvement and personalization.
- Encourage and in some cases demand that your school is striving to realize the aspirational vision for learning.

Funders can….

- Take a portfolio approach to grantmaking by including a few deep investments in innovation along with support for existing approaches.
- Concentrate innovation capital in a small number of organizations best positioned to achieve deep, scaleable breakthroughs.
- Expect outcomes not limited to current academic measures and instruments; in fact, encourage and fund the search for measures capture student outcomes on personal growth including motivation and habits of success.
- Remain open and patient with innovation projects; open about the critical inputs and patient for iteration to necessary to truly redesign school models before pushing for scale.

Policymakers can...

- Create accountability systems based on individual student growth in academic subjects, and encourage the validation and adoption of measure of a broader set of student outcomes for personal growth such as agency, self-management, collaboration, and communication.
- Create incentives for new model design by developing competency-based credit systems and assessment solutions that support them
- Adopt privacy policies and procedures that make students and parents feel safe using technology more expansively.

Researchers can ...

- Develop new ways to capture the full range of student outcomes we care most about
- Work with designers and practitioners to measure impact in increasingly valid ways while still being able to iterate rapidly in real learning environments
- Partner with designers and practitioners to translate scientific discoveries in learning and motivation into the model components that make up real schools

Ultimately, everyone must have courage -- courage to challenge our prior assumptions about learning, school and the role of R&D, and courage to change course, if necessary.

Each of us -- no matter what role we play -- has the ability to accelerate the creation and proliferation of schools of the future. We must collectively rally around the needs of innovators and early adopters, and also

ensure that these efforts carefully build upon their work to provide every child, everywhere with highly effective and wildly inspiring learning communities.

What about you?

In order to ensure that this momentum continues forward, we ask that you:

- **Comment** on our vision for the design principles of student-centered learning and schooling. What did we get right, and what are we missing?
- **Share** with us your own criteria for assessing which innovations are taking us down the path toward full-scale redesign. How will we know when we're on the right track?
- **Tell** us who else is doing this work well. Where do you see the future of school unfolding?
- **Carry** the work forward. How might you and others help address other key needs in this cycle -- such as changing policy conditions or engaging parents in this new vision for learning?
- **Partner** with others to push this work forward, even (and, perhaps, especially) with those with whom you have many disagreements. We all have deep common ground in terms of what we want for kids.

APPENDIX: Design Principles for the Future Model of Schooling We Envision

	The historical model: Fit the individual into the system	**The future model:** Fit the system to the individual
1. FOCUS OF SCHOOL	**ACADEMICS IN CORE DISCIPLINES.** Preparing students to graduate and gain entrance into a stable, predictable job or higher education. Heaviest focus in subjects that are measured by standardized tests. Subjects typically separated to manage instruction.	**LEARNING GOALS THAT ARE BROAD, DEEP, AND INTERDISCIPLINARY.** Preparing students to thrive in and transform the fast-changing 21st century, which requires both rigorous cross-disciplinary academics; as well as character strengths, habits of success, and personal leadership.
2.EXPECTATIONS OF CHILDREN	**SET EARLY, KEPT MODEST** Modest expectations for many, high expectations for a few, and low expectations disproportionately biased towards low-income and minority students. Expectations set early on and unlikely to change over a students' time in school.	**HIGH FOR ALL** High expectations – and strong support – for ALL STUDENTS to fulfill their potential through attainment of knowledge/skills and continuous personal learning growth. Keep as many doors open, for as long as possible, for every student.
3. ROLE OF STUDENTS	**OBEDIENT, PASSIVE RECIPIENTS** of knowledge who are directed to move in fixed groups through same content at the same pace and in the same way. Students progress forward based on year-end assessments and seat time.	**ACTIVE OWNERS** of their own learning/future, who move through different content at their own pace and modality, building habits and pursuing skills that open doors to their own goals and dreams. Students progress forward by demonstrating competency based on ongoing assessments of mastery and

		readiness, whenever they are ready to do so.
4. DELIVERY OF INSTRUCTION	**FIXED AND CLASSROOM-BASED.** Schools buy instructional materials and staff delivers all instruction. Students assigned to fixed classrooms, with instruction provided by that classroom's teacher, who almost always inherits student with a wide range of capabilities and interests -- but has limited flexibility or tools to customize.	**FLEXIBLE AND PERSONALIZED.** Schools and teachers coordinate and curate curriculum and instruction based on student needs. Students have ongoing access to whatever instruction best matches their learning needs -- from peers, from various educators in their own school and surrounding community, from local or remote experts, from nearby or virtual educators, and from educational software and games. Varied and ongoing assessments to measure achievement and growth and to inform future instruction and learning.
5. ROLE OF EDUCATORS	**ONE PERSON, MANY HATS.** Classroom teacher responsible for everything that happens in a single subject or classroom, often isolated from collaborators. Roles often hard to sustain, but teachers are rewarded for sticking around**.**	**MANY PEOPLE, MANY HATS.** Educators collaborate, with specialized roles that could split along different strengths or subject or skill expertise, and combine in different ways according to school and community needs. Roles more sustainable, with educators prized for adding value.
6. ROLE OF PARENTS	**PASSIVE CUSTOMERS**, often inadvertently kept at a distance by school structures or policies	**ACTIVE PARTNERS** with the school and with their children in students' choices and progress

7. NATURE OF SCHOOL COMMUNITY	**SEPARATION.** Separate classrooms, desks and lockers to keep order. Many schools have homogenous racial or economic populations.	**TOGETHERNESS.** Focus on collaboration and community – sharing/working together. Greater diversity – whether inside school or across school boundaries with other communities.
8.TECHNOLOGY	**PERIPHERAL.** Technology as peripheral; used for limited tasks that don't require a human touch.	**EMBEDDED.** Technology as backbone that enables the above attributes to be managed effectively at scale; used to accelerate learning, enhance human interactions, and strengthen community by facilitating student/teacher collaboration and engaging parents.