Crossing the Chasm: Investing in the Early Stage Scaling of Personalized Learning at the Bill & Melinda Gates Foundation

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Crossing the Chasm: Investing in the Early Stage Scaling of Personalized Learning at the Bill & Melinda Gates Foundation

Doctor of Education Leadership (Ed.L.D) Capstone

Submitted by
Zoë Stemm-Calderon

To the Harvard Graduate School of Education in partial fulfillment of the requirements for the degree of Doctor of Education Leadership

May 4, 2015
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Many individuals have helped me find the right balance of challenge and support to learn and contribute throughout my residency and capstone writing. I feel immense gratitude for each of these teachers. At the Bill & Melinda Gates Foundation:

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- The co-leaders and members of the Personalized Learning Working Group for their deep engagement, philanthropic wisdom, and willingness to navigate ambiguity together. And so many other new colleagues at BMGF that shared their insights, encouragements, and humor.

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Dramatic shifts in our economy, the nature of learning, and the demographics of students are placing increasing demands on US K-12 school systems to be more responsive to students and our rapidly changing society. The Bill & Melinda Gates Foundation (BMGF) has played a catalytic role in funding an emerging movement of teachers and school and system leaders who are redesigning their learning environments to personalize learning for students. Early results in these pioneering schools are promising and there is growing interest in personalized learning across the education sector. During my residency, I was charged with co-leading a working group to design a strategy for investing in the early stage scaling of personalized learning.

The personalized learning movement is not the first to aim at transforming how we “do school.” Drawing on innovation theory and research on the history of movements to innovate the pattern of schooling, I argue that these movements struggle to transform the US K-12 education system because foundations (and the education entrepreneurs they invest in) underestimate the perils of diffusion and do not capitalize on the early adoption phase to prepare for broader scale. I then describe my work to form and launch the working group and our collective efforts to define an investment strategy. From my analysis of our results and my actions I offer three key implications for BMGF and others who would influence transformations in the pattern of schooling through philanthropy or other “outside-in” reform avenues. First, successfully developing an instructional innovation for scale requires investing to codify dominant designs for instruction and organizational infrastructure and building the enabling conditions for wider adoption, including a social movement of education stakeholders.
to demand transformation. Second, foundations transitioning from incubating an innovation to investing in broader scale pass through a key period of integration that demands thoughtful change management as the organization develops new collective innovation and learning capabilities. Third, I offer reflections on effective education leadership in this era of rapid transition from the industrial era to the information age.
INTRODUCTION

Many have bemoaned the lack of innovation at scale in the public education system over the last century (Christensen, Horn, & Johnson, 2008; Elmore, 1996; Horn, Staker, & Christensen, 2014; Thomas & Brown, 2011; Tyack & Cuban, 1997; Tyack & Tobin, 1994; Wagner, 2014). It has been more than three decades since the 1983 release of *A Nation at Risk* spawned the modern school reform movement, unleashing diverse actors with diverse theories of change to beat back the “rising tide of mediocrity” that threatened American competitiveness (Mehta, 2013). While a great deal of debate remains about which reforms are worthy of continued investment, there is little debate about the limited progress we’ve made despite the increased time, money, and attention paid to improving our school system.

Student achievement has been more or less stagnant on national and international benchmarking assessments, with persistent “achievement gaps” by race and socioeconomic status and a troubling decline in our standing relative to other countries (Murnane, 2007; Simon, 2013).

While high school graduation rates are at an all-time high, surpassing 80% for the
first time in 2012 (Blafanz et al., 2014), only 57% of high school graduates are going on to college ("Digest of Education Statistics," 2013) and as illustrated in Figure 1, there is a stubborn and alarming gap in bachelor’s degree attainment between young adults from low-income and high-income backgrounds (Cahalan & Perna, 2015). As Charles Payne wryly observed, the last thirty years have been marked by a great deal of reform and very little change (Payne, 2008).

Consistent with our pluralistic society, debates abound about how to achieve our increased educational aspirations in our radically shifting landscape of work and learning. Those pinning their hopes to standards bicker with progressives interested in a more humanistic design for schooling. Market-based reformers squabble with those committed to democratic local governance. Personalized and deeper learning advocates challenge traditionalists and one another. Advocates for professionalization take issue with those who argue for a broader and more open definition of “teacher.” This diversity of perspectives is in no small part enabled by America’s unrivaled private philanthropy sector. As Joel Fleishman has observed, “in America’s civic (not-for-profit) sector, it is the foundations that put the power of concentrated money behind individuals and the associations they form, thereby transforming American pluralism into polyarchy\(^1\) with effective firepower (Fleishman, 2009, p. 50).” Thus, in this capstone I examine how the Bill and Melinda Gates Foundation can employ lessons learned from previous efforts to transform the fundamental pattern of schooling to effectively develop and scale the latest movement to make our education system more responsive to students and society.

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\(^1\) Polyarchy refers to the existence of many separate, independent, power centers in society.
Ambidextrous Ambitions at the Bill & Melinda Gates Foundation

While the cacophony of problem definitions and solutions offered in the US K-12 education sector can be deafening, underpinning these arguments is a fundamental debate. The debate is about whether it will require evolutionary or revolutionary change to achieve our ambitious goals of educational excellence and equity in our rapidly changing world? Proponents of evolutionary change tend to focus on improvement and on discerning which policy and practice levers to use to bring our current understanding of best practice to scale in the current design of the education system. Proponents of revolutionary change tend to focus on innovation and on creating the conditions for discovery and diffusion of fundamentally new approaches to facilitating learning. Perhaps unsurprisingly, the Bill and Melinda Gates Foundation (BMGF) is of two minds about this question. The largest philanthropic donor in the US K-12 education sector, BMGF has an ambitious goal for impact--that by 2025, 80% of high school seniors will graduate career and college ready. They also have a theory of action that approaches social problems with both evolutionary and revolutionary intention, or what organizational development scholars describe as ambidexterity.

In a 2007 commencement address at Harvard University, Bill Gates described this approach to solving social problems: “Cutting through complexity to find a solution runs through four predictable stages: determine a goal, find the highest leverage approach, discover the ideal technology for that approach, and in the meantime, make the smartest application of the technology that you already have (Bishop, Green, & Clinton, 2009).” Since Dr. Vicki Phillip’s arrival as Director of the College Ready team in 2008, BMGF has pursued this ambidextrous approach to change in the US K-12 education sector with a focus on three core strategies:
• College Ready Standards: Consistent college ready standards and the assessment and tools to support teachers and systems in their implementation of those standards, and

• Effective Teaching: Redesigned human capital systems, including multiple measures to improve teaching practice and inform professional development

• Innovation: Investment in charter management organization and district-led school model innovation, which came to be called “personalized learning,” and the technology and enabling conditions to support this instructional innovations (Vicki Phillips, personal communication, July 21, 2014).

These strategies represent the foundation’s acknowledgement that improvement and innovation is not an either-or proposition. While we have a great deal of research, policy, and practice knowledge through which we can responsibly pursue improvements in K-12 education, we have yet to design and execute scalable innovations in the design of learning environments that ensure all students are engaged in meaningful learning and prepared to thrive as adults in a rapidly changing world. I was grateful to be invited to join this team to contribute to their ambitious goals and study how they were using their considerable resources, capabilities, culture and formal organizational structure to incubate and scale innovations in the design of learning environments in the education sector.

My 10 month residency at BMGF was designed to sit across the innovation and improvement sub teams within College Ready, seeking to understand both strategies and the potential synergies and interactions between them. I began my work focused on producing a white paper analyzing how the current improvement strategy could shape the diffusion of the personalized learning innovations. Three months into my residency however, I pivoted to co-lead a
working group charged with designing a strategy for investing in the scale of personalized learning. Our work together spanned from December 2014 to May 2015 and focused on multiple strategy formation and implementation goals. This capstone will focus on my work to form and launch the group and our collective efforts to define an investment strategy for early stage scale of personalized learning. It is the story of an organization in transition from seeding innovation to investing in the broader adoption of that innovation and discovering the demands that aspiration placed on the team to work in new and more integrated ways.

**A Time of Significant Transition**

Prior to my arrival at BMGF, the 2014 fiscal year had been a period of significant change in the internal operations of the College Ready team. While the core strategies remained the same, the way that the team was structured to pursue the work changed significantly. Recognizing that both the improvement and innovation investments were reaching a new phase of development, Dr. Phillips reorganized the team from topic specific sub-teams that capitalized on Deputy Director and Program Officer content-specific expertise and networks (i.e. College Ready Standards, Effective Educator Team, Next Generation learning team), into “one team.” Although the team retained seven Deputy Directors who each managed one sub-team, now those teams shared accountability to one set of goals and outcomes focused on the collective improvement and innovation agenda and contributed functional expertise to achieving their common ends. Notably, the Deputy Director who had led the development of the innovation portfolio since 2010, Stacey Childress, left College Ready in this time period and was replaced by Tom Stritikus, in September 2014.
To support this “one team” culture, the leadership team set two shared team outcomes to achieve by 2019 to be on track to the 80% career and college ready goal:

- 30% of teachers demonstrate significantly improved instruction aligned to common core instruction
- 5% of students demonstrate accelerated progress through personalized learning (Vicki Phillips, personal communication, July 21, 2014)

The leadership team also launched a working group in the spring of 2014 to design a common “scale and spread framework” to guide investment towards these outcomes in eight targeted geographies. This scale and spread framework was unveiled in July of 2014, to guide the integrated investments of newly formed “state teams,” made up of program officers from across the functional teams and led by one “state lead” program officer. The framework focused investment strategies in targeted geographies on funding technical assistance providers, fast adopters, and teacher networks that could work within implementation networks of local education agencies, against a backdrop of strong grass-roots and grass-tops advocacy and partnerships with other local funders (see Appendix A for framework). Leadership team expected state teams would build state plans with key stakeholders in targeted geographies, informed by the scale and spread framework and College Ready’s strategies.

The first scale and spread working group developed the framework around the improvement strategies – supporting high quality implementation of the CCSS and systems to support effective teaching in school districts and charter management organizations. The group decided to table thinking about how to accelerate the early scale of personalized learning,
although the 5% target for students experiencing personalized learning was intended to guide part of the state plans. By the fall of 2014, state teams had begun drafting plans and would be seeking approval and funding throughout the 2015 fiscal year.

It was against this back drop that with support from my mentor, Deputy Director Irvin Scott, and a handful of colleagues on the improvement and innovation teams, I sought and was granted approval from Dr. Phillips to launch a working group to design a strategy for integrating personalized learning investments into 2016 state plans to make progress towards personalized learning target.

Capstone Organization

This capstone is organized into four sections. First, a review of knowledge for action that aims to survey the research and theory I used to shape my approach to my leadership task. In this section I present an argument for why innovation in the pattern of schooling is necessary, why personalized learning is a promising early movement, and I review the history of past movements for innovation to glean lessons to inform the College Ready strategy. I also review the literature on ambidextrous transitions and teaming, which informed my co-leadership of the working group. Second, I present a theory of action based on my review of knowledge and my diagnosis of what was needed for building a strategy for early stage scale of personalized learning. I emphasize organizing the working group for learning, identifying the challenges of early stage scaling, and aligning our strategy recommendations while negotiating the issues of leading as a resident. Third, I describe how I applied this theory of action during my leadership of the working group and analyze the results that I achieved. In so doing I recognize that in framing our problem as a strategy formation challenge, I failed to connect it to the broader change process within College
Ready, which threatened the implementation of the strategy by not adequately planning approaches to encourage and incentivize more collective ownership of innovation across College Ready. And finally, I offer implications from my work for my own leadership, College Ready, and the education sector.
At its core, what foundations do is very simple. “The leaders of a foundation – provide funds from the foundation’s income or endowment to support not-for-profit organizations, charities, or other programs and organizations in accordance with the mission designated by the founder (Fleishman, 2009, p. 3).” However, in its execution, diagnosing what is needed to effectively solve a social problem and design an aligned strategy for investment is complex and challenging work. And in the world of “wicked” social problems, few have proved as difficult to address through philanthropy as transforming US K-12 education. A $700 billion industry, with a broad constituency organized to defend the status quo, and a complex policy and political landscape spread across federal, state, and local government, it is no surprise that the last half-century of philanthropic giving is littered with cautionary tales (Russo, 2015): Annenberg’s $500 million gift that taught philanthropists better specify means and ends (Fleishman, 2009, p. 268), the “failure” and then recognition of impact of Gates’ small school movement that illuminated the challenge of being impatient for impact and patient for growth (The Editorial Board, 2014), and what Rick Hess (2014) has coined the “first do no harm” lesson of Mark Zuckerberg’s $100 million gift to Newark, NJ, which showed few results and engendered significant community blowback.

The boneyard of education philanthropy strategies holds many lessons, which taken together should humble any education philanthropist embarking on a project to build an investment strategy that produces meaningful change for students in this system, let alone a strategy that aspires to transform the pattern of schooling that has endured for 100 years. In the case of my leadership task to co-lead a working group to design a strategy for investing in
the early scale of personalized learning, two dynamics further complicated an already challenging philanthropic strategy formation task:

- **An Ambidextrous Transition**: The early stage scaling of personalized learning represented the first time under Dr. Phillips leadership that the College Ready team had successfully incubated an innovation strategy and would pursue integration across their innovation and improvement teams, or what organizational development scholars describe as an *ambidextrous transition* (O’Reilly & Tushman, 2013).

- **Leveraging a Team**: I was a resident and had no formal authority to draw from to lead this strategy formation process. Therefore, I would need to think strategically about how to form and co-lead the working group.

To tackle this challenge, I reviewed the literature to answer the following questions. My findings are summarized in this review of knowledge and ultimately informed my theory of action.

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<td>What can we learn from past philanthropic efforts to scale learning environment innovations to inform College Ready’s strategy for scale?</td>
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**Education Systems that Adapt to our Rapidly Changing World**

The so-called “factory model” pattern of schooling established by the administrative progressives in the early 20th century has proven extremely durable (Mehta, 2013; Rose, 2012).
Education scholars point to many causes for the lack of innovation in how we organize learning: the governance model of school districts (Chubb & Moe, 1990; Tyack & Cuban, 1997), the lack of sophistication of the innovators in winning over teachers and families (Elmore, 1996; Tyack & Tobin, 1994), the process of socialization into a pattern of the teaching profession that begins in Kindergarten (Lortie, 2002), and others. But why is innovation in the design of school systems even necessary? Perhaps advocates for the status quo are correct and what we need is more high quality human resource, money, and improvement strategies, without transforming the hundred-year-old design of school systems? The answer to this questions lies in the increasing complexity of the US economy and our global society, and the demands that places on our education system to be more adaptive and responsive.

The last 30 years of the modern school reform movement has involved dramatic shifts in the economy and society we expect students to lead and thrive in as a result of their education (Wagner, 2014). We are in a period of rapid transition from the corporate industrial age, where stable markets made it advantageous for institutions to centralize management and pursue coherence around a strategy based on a predictable future, to the innovation age, a period that demands decentralization and flexibility as institutions contend with constant change (Davidson, 2014). In this increasingly uncertain environment, a number of core assumptions underpinning the original design of the US K-12 and post-secondary system are shifting. Our current system was built primarily to sort students into college and non-college going tracks and then deliver a predetermined curriculum of finite knowledge and skills. However, given the complexity of the current economy, today 85% of jobs require post-secondary education (Wagner, 2014, p. xix). Further, no longer will most adults be able to count on having one career, let alone one job, for a
lifetime (Davidson, 2014). Instead, current kindergartners will experiment with different careers, and have to adapt as the market demands. This will require that they constantly learn and expand their skills. While once people secured their status and reputation from where they went to school or where they worked, personal reputations will become more transparent, important, and self-constructed. Traditional credentials will matter less and the competencies an individual has demonstrated to colleagues and clients will matter more (Davidson, 2014, p. 10).

The transition to the innovation age is not only relevant to the world children will work and lead in as adults. As City, Elmore, and Lynch (2012) have observed, this transition is also fundamentally redefining learning. As the body of relevant knowledge expands exponentially and the portals for accessing that knowledge move from a finite number of institutions to devices we can carry in our pockets, “learning becomes mastering the ways of imputing meaning to information – not recall and application of official knowledge (City et al, 2012, p.156).” Developing expertise in this context is no longer just about learning to amass information, but instead about learning how to find, evaluate, and apply widely available and accessible knowledge (Thomas & Brown, 2011, p. 93). This radical shift in the definition of learning, has profound consequences for the school, which will either adapt its approach to facilitating learning or face increasing competition from the expanding number of alternative vehicles for learning (Christensen et al., 2008). As Richard Elmore has succinctly put it, “learning outside of schooling is exploding; learning inside of schooling is imploding” (Mehta, Schwartz, & Hess, 2012, p. 197).

Finally, these last 30 years have also involved rapid changes in the demographics of who comes to public schools. School age children are increasingly more racially and ethnically diverse, more likely to be English language learners, and more likely to come from families in the lowest
two-quartiles of income distribution (National Center for Educational Statistics, 2014). With this change in demographics come changing needs for schools to respond to in order to achieve equitable outcomes for all students. These three forces—the changes in the demands of our economy, the changes in the very nature of learning, and the changes in the demographics of students—are three powerful disruptions that the design of our current system has struggled to adapt to, as evidenced by pervasive gaps in achievement and opportunity for low-income, minority, and ELL students. Hence the need for innovation in the basic pattern of schooling to better respond to these challenges.

**Building the Personalized Learning Movement**

Like many philanthropists throughout this century, the leadership at BMGF have invested in the discovery and development of innovative learning environments that respond to our societies’ changing needs. One could argue that BMGF’s focus on innovative designs for learning environments began with its original small schools investments which sought to increase “rigor, relevance, and relationships” by right sizing the design of public high schools (Bishop et al., 2009, p. 55). However, since 2010, College Ready has centered their innovation agenda on incubating a particular pattern of learning environment innovation that has come to be known as “personalized learning.” While the movement is still relatively small, involving hundreds of schools and a handful of districts and CMOs across the country, the early evaluation of the impact on student performance is encouraging and enthusiasm and interest in personalized learning is growing.

College Ready has worked in partnership with personalized learning innovators across the field, to create the following working definition of personalized learning:
Systems and approaches that accelerate and deepen student learning by tailoring instruction to each students’ individual needs, skills, and interests. Students have a variety of rich learning experiences that collectively will prepare them for success in the college and career of their choice. Teachers play an integral role by designing and managing the learning environment, leading instruction, and providing students with expert guidance and support to help them take increasing ownership of their learning (Rand Corporation, 2014, p.6).

Personalized learning is not just an improvement to traditional instructional methods. In personalized learning schools, teachers and leaders are fundamentally redesigning how they use time and resources, including adaptive technology, to deliver on a new dimension of performance—ensuring students are self-directed learners who have the knowledge, skills, and habits of success to complete college and succeed in their careers\(^2\). Personalized learning innovators are transforming schools from top-down, teacher-driven organizations to complex adaptive systems that enable student-directed learning and respond to students’ diverse needs to ensure all students thrive. Take math instruction at Summit Public Schools, widely regarded as a leader in innovating the personalized learning model (Bernatek, Cohen, Hanlon, & Wilka, 2012).

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\(^2\) Improvement is doing something better to achieve better results. Innovation is doing something different to achieve new results. While both actions are aimed at increasing the performance of an organization or system, as Peter Drucker asserted, innovation is a “change that creates a new dimension of performance (The Drucker Institute, n.d.)"
Rather than thirty students spending 45 minutes in a typical teacher-directed high school math class that involves some lecture, small group work and individual practice, students at Summit direct their own learning (see Figure 2 for diagram of learning environment design). They set individual learning goals, map tailored pathways for achieving them, alternate between multiple instructional configurations (individual online work, small group collaboration, teacher led instruction), and access teachers according to their learning needs. Credentialed and non-credentialed teachers operate as facilitators of student learning, balancing time between working one-on-one with students at “tutor bars,” leading problem-based learning with smaller groups, and monitoring student progress on individual pathways.
Personalized learning is distinct, but related to other efforts to innovate instructional practice using technology – blended, flipped classroom, technology integration, etc. Director of NGLC, Andy Calkins (2014) has provided a helpful frame in Figure 3 for categorizing these various permutations by sorting them on dimensions of degree of individualization (from cohort-based to individualized) and use of digital technologies (from little to transforming). Personalized learning models exist across the top two quadrants, stretching path and pace with extensive to transforming amounts of digital learning strategies. However, as this framework reflects, this movement for learning model innovation is still in the early stages of development with a great deal of experimenting and consensus building left to do.

College Ready’s investment activity to nurture and develop the personalized learning movement has included:

- investments to support Summit and other charter networks’ redesign of their learning environment in partnership with Khan Academy, Facebook, and other partners,
investments in school design challenges to launch or redesign existing schools to personalize learning for students through an intermediary, Next Generation Learning Challenge (NGLC),

- investments in “model providers” to support more districts and charters to adopt personalized learning, namely, New Classrooms
- strengthening the market of digital content and tools to support these schools,
- and creating enabling conditions through school system transformation, policy, and advocacy.

By 2015, College Ready will have funded the design and launch of approximately 150 personalized learning schools. Most recently, College Ready has begun to test a hypothesis about scaling and spreading personalized learning by making Next Generation Systems Initiative grants through seven regional intermediaries (supported centrally by NGLC) and directly to six districts committed to redesigning their schools and system to support personalized learning. These districts are in their planning year and their schools will launch in the fall of 2015.

While personalized learning schools like Summit and other variations in the Next Gen portfolio are still years away from evaluating whether their instructional innovation will deliver on the ultimate goal of increased college completion, early evaluations of leading indicators, such as academic performance, have demonstrated promising results. A Rand evaluation (2014) of the 23 charter and district personalized learning schools in operation for 2 years compared academic gains in math and reading on the Northwest Education Agencies (NWEA)’s Measures of Academic Performance (MAP) for their 5,000 total students to a virtually matched comparison group
constructed of similar students selected from comparable schools. These early results from an on-going evaluation of BMGF investments in personalized learning found greater performance gains for personalized learning students, with effect sizes of .41 in math and .29 in reading (see Figure 4). While there was considerable variation in the results of the 23 schools, two-thirds of schools demonstrated statistically significant positive results in either math or reading. There was also evidence that the personalized learning theory of action may be delivering on the goal of academic acceleration, conferring the greatest academic gains to those students in the lowest quartile of performance at the beginning of the year (see Figure 5).
As promising as these results are, they only provide correlational evidence that personalized learning schools accelerate student gains. The next two years of the Rand evaluation will be critical to as the sample expands to 50+ schools (including some district schools), better evidence is collected on student dispositions and high school academic achievement, and more conclusions can be drawn about which aspects of different personalized learning models are most strongly correlated with positive outcomes for students. The Rand study is a significant addition to an emerging evidence base evaluating the impact of personalized learning to accelerate academic performance. While this evidence is not yet conclusive, it is promising and there is a growing interest among teachers, school, district, and state level education leaders in implementing personalized learning.

In a November 2012 survey of a demographically representative sample of 250 school and system leaders, a majority of respondents reported they had interest in blended learning, with over 50% of district leaders and 35% of school leaders having taken action (see Figure 6). In open ended comments about why they were implementing blended learning, a smaller fraction of respondents (18% of district administrators and 9% of school leaders) referred to pursuing blended learning strategies with the goal of personalization or differentiation of instruction. In

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3 These include an evaluation of the academic performance of students in the New Classrooms personalized learning model (Ready, Meier, Horton, Mineo, & Yusaitis Pike, 2013) and an SRI International evaluation of blended learning, an instructional innovation utilizing technology to tailor instruction to students needs that is often a component of personalized learning models (Murphy et al., 2014), and a number of case studies of personalized learning schools created by FSG, AEI, and others (Bernatek, Cohen, Hanlon, & Wilka, 2012; Lautzenheiser & Hochleitner, 2014).

4 In this survey, “blended learning” was defined as “an education program in which a student learns online (through computer based instruction) and through direct instruction (by a traditional in-person teacher) with both of these two elements integrated within a course, subject, or class. For more on the relationship between blended and personalized learning, see iNACOL’s helpful report, Mean What you Say: Defining and Integrating Personalized, Blended, and Competency-based Learning (Patrick, Kennedy, & Powell, 2013).

5 In Figure 6, “Action” represents those respondents who report having implemented blended learning models in their district or school; “Transformative action” represents those respondents who reported implemented blended learning models that significantly altered the instructional model such that teaching and learning look dramatically different in some or most schools or classes.
another signal of significant early interest in personalized learning, 1600 districts signed the Future Ready pledge to strengthen their technology infrastructure and move towards more personalized learning.

Our working group’s charge to identify investment strategies to support the early scale of personalized learning was stimulated both by this emerging body of evidence to support the promising effects of personalized learning and a growing appetite and attention to blended and personalized learning across the education sector. However, philanthropists have successfully incubated innovations in learning environment design before, and yet the basic design of schools has not evolved significantly since the founding of the common school in the early 1900s. What can we learn from these previous movements to better define the problem that College Ready faces in seeking to scale personalized learning?

Learning from the History of the Scale of Innovations in the US K-12 Education Sector

The personalized learning movement is not the first to aim at dramatically transforming how we “do school.” At least three major waves of 20th century reforms to transform the
design of schools – the episodic progressive movement and standards based movement – shared similar goals to bring ambitious innovations incubated in a small number of schools to scale across the sector (see Figure 7). In fact, as early as 1920, in the decades immediately following the founding of the common school in the early 1900s, proponents of the Dalton Plan offered instructional innovations and arguments for why the “class system and time table” were not suited to the way students’ learn:

“The time-table originated in the assumption that the teacher should dictate what his pupils are to do at every hour of their school lives, and the class-system in the belief that he may ignore the varied modes and rates of movement which distinguish one mind from another, and may treat five and twenty minds (or a hundred) as if they were one (Bassett, 2012).”

Each of these movements for innovation in the design of schooling flourished for a time, gaining momentum with the help of high status professional educators and philanthropists, until each ran into unforeseen limits to scale and fell out of favor. They provide the historical context to support a more accurate framing of the problem College Ready and the working group faces:
how to invest in the early stage development of personalized learning *in order to successfully achieve the conditions for broader implementation at scale.*

First I will examine efforts to scale progressivism, which has important parallels to personalized learning in its attempt to alter what David Tyack and William Tobin have described as the “grammar of schooling,” or the “regular structures and rules that organize the work of instruction (Tyack & Tobin, 1994, p. 454).” The rise and fall of the progressive’s attempts to transform the structure of school underscore the importance of using early adoption to identify barriers in the broader education ecosystem and pursue strategies to address them to ensure momentum continues as the innovation diffuses. We will then turn our attention to the comprehensive school reform movement. The unprecedented success of this large-scale effort to spread a school-wide innovation incubated in one place to many more schools serving low-income students carries lessons about the need for investing in early adoption in ways that build flexible, research tested, implementable models for instruction and organizational infrastructure that can then be adopted by the majority. Finally, we will look at BMGF’s last attempt to alter the pattern of schooling through the small schools movement, which underscores the perils of emphasizing numbers over the development of the innovation in early stage scaling. Analysis of these three movements suggest that our personalized learning scaling strategy must manage the urgency to invest to run up the numbers of places who are engaged with the innovation, and instead pursue the key aim of early adoption – learning enough to:

- Establish changes in the ecosystem that would support broader adoption.
• Distill the dominant designs for instruction and organizational infrastructure that balance delivering enough value, with being implementable by the majority, with being flexible enough to fit into different contexts.

**Adapting the Ecosystem: Lessons from the Progressive Movement**

In their look at the origins and subsequent challenges to the “grammar of schooling,” educational historians Tyack and Tobin (1994) provide a compelling argument for why the traditional organizational patterns of schooling have been so difficult to budge. Administrators, who benefited from authority and connection to the en vogue concept of “scientific management,” established these patterns in the early 20th century after making successful political arguments for why such institutional arrangements as the graded schools and curricular-differentiation, underpinned by the Carnegie unit, were the most efficient and effective means to organize the rapidly expanding school system. These reforms benefitted from “first mover advantage,” becoming the taken for granted way that most educators and the society conceived of a “real school (Lieberman & Montgomery, 1988).” These patterns have endured in no small part because they have “enabled teachers to discharge their duties in a predictable fashion and to cope with the everyday tasks that school boards, principals, and parents expected them to perform (Tyack & Tobin, 1994, p. 476).” In this way they endure both because they have become part of the default mental model for how our society defines school and because they make life easier for the educators that operate within them.

Tyack and Tobin (1994) examine three of the progressive movement’s major attempts to alter these patterns: the Dalton Plan to eliminate grades and personalize learning of the 1920s, the Eight-Year Study to create more flexible high schools of the 1930s, and the new model flexible
high school of the 1960s. Each of these innovations enjoyed a “short, happy life,” flourishing for some time with the support of foundations, professional associations, and enthusiastic teachers and administrators (p. 477). But none was able to sustain their growth beyond an enthusiastic group of early adopters to alter the predictable patterns of schooling at scale, each eventually receding as new innovations came into favor.

Tyack and Tobin (1994) offer two common reasons for their failure. First, leaders of these movements failed to recognize the political dimensions of transforming schooling. Overly focused on creating school models and plans that would compel their peers to adopt their innovation, “they did not cultivate the kind of broader social movement that might nourish educational and social change (1994, p. 477).” This lack of a broad base of support from all of the stakeholders implicated in the transformation of schooling, combined with the second obstacle to scale - rampant burnout among advocates and early adopters of reforms. The pattern of initial enthusiasm leading to exhaustion should be no surprise, given that innovations of this ambition require educators to simultaneously transform their practice while convincing students, colleagues, parents, and community members of the innovation’s merits, typically based on a meager track record of impact. Tyack and Tobin (1994) quote Milbrey McLaughlin in summarizing the perspective of the practitioner considering adoption of an instructional innovation as “confronting a complicated innovation that show[ed] no clear advantage over existing practices – at least in the ways that often matter most to school boards, voters, and anxious parents (p. 478).” In this way, these fore-mothers-and-fathers of the personalized learning movement sowed the seeds of their own marginalization by “focusing on the tangible, visible, and material products of reform – plans, processes, curricula, materials - and focused much less, if at all, on the less
tangible problem of what might cause a teacher to teach in new ways, if the materials and support were available to do so (Elmore, 1996, p. 11).”

The fundamental lessons that emerge from past efforts to scale a transformational instructional innovation represent the common human behavior of over focusing on the technical aspects of solving a social problem, while failing to adequately address the adaptive dimensions (R. A. Heifetz, Linsky, & Grashow, 2009; R. Heifetz, 1998; Linsky & Heifetz, 2002). Much like the leaders of the progressive movement, College Ready has begun their efforts to encourage instructional innovation by focusing on predominantly technical aspects of the work: creating effective school models, building better technology tools, data infrastructure, cultivating technical assistance providers to support school system transformation and encouraging a community of practice among innovators and early adopters. This alone has been difficult and necessary work. However, to succeed in scaling personalized learning from rarefied examples like Summit Public Schools, College Ready will need to pick up a new, more adaptive kind of work on readying the ecosystem for innovative school models. They could do this by using this period of early adoption to focus on building a movement of key public education stakeholders to demand that schools respond to their changing societal context and reducing barriers to adoption in state policy and accountability frameworks. Without this readying of the ecosystem, there is little likelihood that personalized learning will diffuse to the majority of school districts.

But this is not to understate how important the technical aspects of scaling and spreading personalized learning will surely prove. While ambitious early adopters are willing to risk the chaos and potential failure of experimenting with a new instructional design, and may even prefer to design their own solutions or cobble together tools from multiple providers, members of the
majority will not endure that risk. Emerging from the early adoption phase having identified multiple effective, relatively easily adoptable, “dominant designs,” is critical to ensuring that personalized learning avoids the fate of past school model innovations. To better understand how developing and codifying dominant designs can be an effective engine of scale for personalized learning, we will now turn to examining lessons from the comprehensive school reform movement.

**Building Dominant Designs: Lessons from Comprehensive School Reform**

Throughout the 1980s and 90s a series of loosely coordinated policy and philanthropic efforts supported the conception and evolution of the comprehensive school reform (CSR) movement. The goal of the movement was to dramatically improve student performance in America’s weakest public schools through the scale up of research based practices, largely delivered to schools and districts through technical assistance providers. CSR achieved unprecedented scale (Cohen, Gates, & Goldin, 2014, p. 2). For example, at the apex of their operations, one of the largest CSR providers, Success For All (SFA), supported more than 1,600 schools while demonstrating statistically significant, if modest, academic results for students (Cohen et al., 2014, p. 60). While CSR proponents sought to improve achievement without altering the organizational structure of schooling, their efforts to spread a school-wide model from a successful instance in one place to many more schools through the work of a technical assistance provider is instructive for the College Ready team as they consider how to invest in early adoption in ways that enable broader scale.

In their study of how SFA achieved their level of quality implementation at scale, Peurach and Glazer examine the research on commercial replication and adapt to education a definition of
organizational replication as featuring a “central ‘hub’ organization that devises a school-wide improvement model that is enacted in ‘outlet’ schools (Peurach & Glazer, 2012, p. 157).” Further, they counter the conception of replication as the hub scaling a perfect model to outlets, with a “knowledge-based logic” in which the knowledge-base that supports replication is developed and improved through collaborative learning between the hub and the outlets. Thus, replication creates value by scaling a more effective model for schooling and by producing new codified knowledge to improve that model and make it more easily adoptable by a broader group of schools and districts.

Deciding which technical assistance providers to fund to support schools and districts to personalize learning will be a significant technical challenge for College Ready. Peurach and Glazer’s (2012) analysis of SFA, leads them to propose the following questions for gauging whether a partner is prepared to produce the knowledge of practice for scale (p. 182):

- Is there evidence that the program features a design for practice, complemented by design for organizational infrastructure?
- Is there evidence that the design for practice has evolved over time through collaborative learning among the hub and schools that features both exploration and exploitation?
- Is there evidence that knowledge of practice is being retained by formally codifying it, especially in the form of routines?
- Is there evidence that implementation is structured to support a developmental progression from fidelity to adaptation, including means of managing interpretation of the developmental sequence as enabling (and not coercive)?
- Is there evidence of dynamic capabilities in the hub organization that support both continuous improvement and strategic management?

College Ready would be well served by using these questions to evaluate high potential technical
assistance providers to introduce to local implementation networks of school districts and design investments to strengthen their knowledge-building capabilities.

However, since personalized learning is a relatively young innovation, there are very few TA providers who are currently focused on supporting districts to adopt this innovation. Those that are often stop their support of districts at the design phase, losing the rich opportunity to build new knowledge for the field by supporting implementation, measuring differential impact, and adapting designs within a network. Next Generation Learning Challenge, 2 Revolutions, Mastery Design Collaborative and Great Schools Partnership are a handful of organizations that are supporting schools and districts to design personalized learning initiatives. To my knowledge, New Classrooms (only in middle school math) are the only providers who have developed a “design for practice and organizational structure” that they are supporting partner schools and districts to implement. And it remains to be seen whether they will create an active network and improve their designs overtime.

To achieve scale, College Ready will need to consider how they can invest to expand this emerging market of personalized learning technical assistance providers. Knowledge of personalized learning strategies is necessary, but not sufficient to the effectiveness of these partners. In determining which organizations to fund, College Ready should also focus on whether they have, or can develop, the following capabilities that Cohen et. al. (2014) have found to be critical attributes of providers who can impact the quality of teaching and learning in schools: knowledge of what makes an “effective school;” knowledge of how to turn ineffective schools into effective schools; knowledge of the strategies for teaching, organization, and management that
improve learning outcomes; knowledge of how to manage the systems that sustain school improvement across a network.

These are rare capabilities in the American K-12 education sector. Cohen et. al. (2014, p.179) suggest that a small handful of comprehensive school reform providers (SFA, America’s Choice, Accelerated Schools Plus and a few others) and high performing charter management organizations (Aspire, Achievement First, and KIPP as prime examples) have this know-how and these may be promising partners to evaluate for development as personalized learning TA providers. College Ready has begun to fund some of these organizations to experiment with personalized learning in their own networks, which could also provide the opportunity to leverage them to build knowledge for the field and consider them as potential future scaling partners. This approach has already paid off with investments in Summit Public Schools, which is launching a “Summer of Summit” in 2015 to work with 20 school districts to adapt their approach for their context, and Aspire, whose project manager, Liz Arney (2015), recently codified their approach to personalized learning in the book Go Blended.

*Impatient for Profit, Patient for Growth: Lessons from the Small School Movement*

BMGF’s last effort to transform the pattern of schooling spanned from 2000-2009 and involved investing $2 billion to make high schools more effective by reorganizing them to be smaller and more personalized. Bill Gates (2009, p. 11) described the aspiration of what came to be known as the “small schools” strategy in his 2009 annual letter:

“The goal was to give schools extra money for a period of time to make changes in the way they were organized (including reducing their size), in how the teachers worked, and in the curriculum. The hope was that after a few years they would operate at the same cost per student as before, but they would have become much more effective.”
By 2009, the Gates Foundation was pivoting away from the small schools strategy towards the current priorities around college ready standards, teacher effectiveness, and innovation. Gates (2009, p. 11) asserted that largely the schools had not lived up to their promise:

“Many of the small schools that we invested in did not improve students’ achievement in any significant way. These tended to be the schools that did not take radical steps to change the culture, such as allowing the principal to pick the team of teachers or change the curriculum. We had less success trying to change an existing school than helping to create a new school.”

However, there were bright spots. A subsequent rigorous evaluation of the small schools strategy in New York City, published between 2010 and 2014, revealed promising results in both high school graduation and college attendance rates (Kruglaya, 2014). BMGF and other education philanthropies had partnered with NYDOE superintendent Joel Klein and invested over $350 million from 2003-2007 to break up large comprehensive high schools into smaller themed schools (Bishop et al., 2009, p. 57). In New York, unlike in other cities, the funding had gone to experienced intermediaries: New Visions (thirty schools), Replications Inc. (eight schools), the College Board (six schools), and the Asia Society (ten schools)(Bishop et al., 2009, p. 58). These intermediaries had practice-tested “templates” that defined “innovative ways to use these structural changes to leverage human, financial, and curricular resources (Bloom & Untermann, 2012, p. 3).” The New York small schools were designed to be more responsive to students’ needs, not just smaller. Contrast this with many of the other implementations of small schools across the country, where grantees were often breaking up large schools into small without the knowledge of how to design or implement better patterns for learning. In the words of one implementer of the strategy in Denver Public Schools, “we were trying to build a plane as we were taking off, and we crashed (Greene & Symonds, 2006)."
What can we learn from BMGF’s first attempt at a learning environment innovation strategy? The small school chapter illustrates the liabilities of a) underestimating the need for dominant designs to guide school model transformation and b) being too aggressive about the scale of an innovation too prematurely. As Christensen and Raynor (2013) have advised, capital for innovative new ventures should be “impatient for profit [or intended results], and patient for growth.” The opposite orientation is too often evident in the education sector where we are impatient to spread a promising new idea and too patient about gathering the evidence of impact and knowledge for scale. Such was the case with the small schools movement.

The promising early results from personalized learning schools can make one feel urgent to invest to encourage adoption in as many places as possible. Given the complexity of this reform and the challenge of developing past school model innovations for scale, College Ready should catalyze more early adopters today as a means to the end of creating the conditions in the ecosystem and dominant designs to encourage broader scale tomorrow. College Ready’s leadership team has already signaled that this measured approach is warranted by setting a much smaller target for the breadth of personalized learning scaling than for other core strategies. However, overemphasizing growth in personalized learning seats could encourage team members to fall in to the historical trap of “running up numbers” rather than building the personalized learning strategy for impact.

While personalized learning is demonstrating promising impact on student achievement (Rand Corporation, 2014), lessons from history would tell us that despite these early results, it
is likely to flourish for a time among pockets of innovators and early adopters and then recede.

I argue that these movements struggle to transform the US K-12 education system because foundations (and the education entrepreneurs they invest in) underestimate the perils of innovation adoption and do not capitalize on the early adoption phase of a promising innovation to prepare for broader scale.

In the words of Geoffrey Moore (2014) describing a similar phenomena in the world of high tech marketing, we are blind to the “chasm” between the visionaries that incubate innovations and the majority of educators and education stakeholders who would need to adopt them in order to transform our existing system. Therefore, innovation enthusiastic education foundations often rush “into wholesale implementation, seeking to involve as many schools as possible as quickly as they [can] (Fleishman, 2009, p. 269),” without first developing the solution for the less risk-tolerant majority and building the resources in the ecosystem that would enable adoption.

College Ready has already laid some of the ground work to overcome this historical pattern of flourish and fail – coupling its early efforts to seed innovation with evaluation and setting a modest target for growth as the personalized learning continues to mature. In order to succeed, it was essential that our working group must frame our task not as “scaling personalized learning,” but as “preparing to scale.” What follows is my review of the organizational ambidexterity and team literature, which informed how my co-leaders and I approached our leadership of the working group.
Successfully Navigating an Ambidextrous Transition

According to Tushman and O’Reilly, “organizational ambidexterity refers to the ability of an organization to both explore and exploit—to compete in mature technologies and markets where efficiency, control, and incremental improvement are prized and to also compete in new technologies and markets where flexibility, autonomy, and experimentation are needed (O’Reilly & Tushman, 2013, p. 2). Organizations use different mechanisms to operate ambidextrously, and our working group’s charge to support College Ready to begin to integrate personalized learning into state plans demanded a transition towards more collective responsibility for innovation. These transitions can be highly disruptive and our working group’s strategy recommendations would need to consider how College Ready could successfully navigate this transition (O’Reilly & Tushman, 2013).

Since the launching of the Next Gen Learning portfolio in 2010, the College Ready Team has pursued innovation through structural ambidexterity, or the creation of an autonomous unit to incubate an innovation (O’Reilly & Tushman, 2013, p. 10). As O’Reilly and Tushman (2008) have observed, structural ambidexterity involves “not only separate structural units for exploration and exploitation but also different competencies, systems, incentives, processes, and cultures – each internally aligned (p. 192).” Within the College Ready team, as in other ambidextrous ventures, these units are linked together through a collection of intentional organizational connective tissue:

- common strategic intent (dramatically more students graduating career and college ready),
• shared core values (optimism, collaboration, rigor, and innovation, see Appendix B),
• points of integration to leverage shared assets (a common grant making process, system for running challenges and RFPs, and method for accessing markets, teacher networks, and targeted geographies),
• and senior leadership willing to manage the tensions between the multiple organizational alignments (O’Reilly & Tushman, 2013).

Structural ambidexterity is useful in ensuring that exploration remains a priority in large organizations that may otherwise become overly aligned around their core improvement strategies. It is a way to ensure that people and resources in the organization are developing the solutions for tomorrow while the bulk of the organization is focused on the demands of today.

However, integrating the early stage scale of personalized learning into the charge for state teams demanded some level of contextual ambidexterity across College Ready. Contextual ambidexterity was described first in 2004 by Gibson and Birkinshaw and is the behavioral capacity of individuals to explore and exploit across a business unit (O’Reilly & Tushman, 2013, p. 11). It essentially transfers some or all of the responsibility for managing innovation from a sub unit to each individual in the organization. It requires a supportive organizational context that encourages individuals to make their own best judgments about resolving the conflicting demands between innovation and improvement. As organizations manage and develop innovations, they often move between and combine structural and contextual ambidexterity. To support College Ready to succeed in this transition, the working group needed to determine
what level of strategic integration across the improvement and innovation teams was appropriate to personalized learnings’ stage of development.

**Using the Wisdom of the Team to Tackle Early Stage Scaling**

To successfully design a strategy for early stage scaling of personalized learning and identify the appropriate points of integration across the College Ready team would require the perspectives and capabilities of team members from across the improvement and innovation teams. The working group would be essential both to the design of strategy and to leading the change with their peers on their functional sub teams.

Amy Edmondson’s (2008, 2012) research on teaming drove my design and co-leadership of the working group culture and process. Edmondson found that a leaders framing of the purpose of the working group, establishing the essential role of each individual to the success of the team, and creation of psychological safety to be distinguishing factors among innovative medical teams. She suggests that balancing high accountability for ambitious performance goals with high psychological safety creates the conditions for teams to learn and innovate (see Figure 8). Edmondson recommends a number

![](image.png)
of actions leaders can take to contribute to making a team a “learning zone”: be accessible and approachable, acknowledge the limits of current knowledge, be willing to display fallibility, invite participation, highlight failures as learning opportunities, use direct language, set boundaries about what behavior is acceptable, and hold people accountable for transgressions. These ideas for how to engage teams in creative work together informed my design of the processes we used to build strategy.

Theory of Action

Based on my review of knowledge, I designed the theory of action in Figure 9 to guide my co-leadership of the working group.

**Forming the Working Group and Establishing Effective Culture**

Forming the working group and establishing an effective culture was essential. Managing membership to ensure that there was cross-functional representation and particularly influential team members from the state teams who could serve as ambassadors of our work to their peers was key to leading the change with other members of College Ready. Given that designing this strategy would require working group members to work together across innovation and improvement teams and devise approaches to investing that are aligned to the early stage nature of this work, creating the conditions for creative and adaptive work

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6 While the scope of the personalized learning working group’s responsibilities extend to ensuring state team’s understanding of personalized learning and design of high impact investment that accelerate early stage diffusion of personalized learning and prepare for scale, due to the constraints of the capstone timeline, I will focus in this paper on forming the working group and designing strategy.
Figure 9: Theory of Action

Key
- Dark grey: Stages of work
- Green: Leadership actions
- Orange: Dependency

1. Acquire authorization and form working group
   - Build container for adaptive/creative work

2. Design effective strategy for early stage diffusion of innovation
   - Define outcomes
   - Integration across improvement/innovation

3. Investments that accelerate early stage diffusion of innovation and prepare for scale
   - Commitment to shared vision
   - Influence senior leaders
   - Frame problem of early stage diffusion
   - Formal authority
   - Manage membership
was also fundamental. These two things were all the more important because I do not have any formal authority, which could mediate my ability to lead this process.

**Designing Effective Strategy for Early Stage Adoption**

Three priorities drove my leadership of the strategy formation process:

- **Framing the problem** as building a strategy that would address the challenges of early stage scaling
- **Defining outcomes** to guide investing that emphasize the need to ready the ecosystem and contribute to the development of dominant designs, and manage the temptation to simply “run up the numbers” of personalized learning seats
- Finding the right points of **integration across the innovation and improvement teams** that maximize collective learning and don’t endanger the continued development of personalized learning for broader scale.

*Framing the Problem*

Although scholarship on effective philanthropic strategy building is limited, both my explorations of efforts to scale school model innovations in the past and my experience with strategy building in my previous work underscore the following insight from leading scholar of philanthropy, Joel Fleischman (2009, p. 234):

“When a foundation initiative aims at solving a particular problem, the very first step towards achieving impact is to get the problem right – to define it clearly, quantify its scope, and specify its causes accurately and objectively.”

In the case of designing this strategy for the early stage scale of personalized learning, framing the problem will involve both defining the problem of developing learning environment
innovations for impact at scale, and framing the problem of how College Ready adapts as responsibility for innovation becomes a shared priority across the team. Getting to clarity and agreement at these two levels is prerequisite to the other two priorities for building this strategy: defining outcomes to guide state team’s personalized learning investing and identifying aligned points of integration across the innovation and state teams.

**Defining Outcomes**

BMGF and College Ready are committed to a particular style of strategic philanthropy known as “outcomes investing.” This approach is often referred to as the “new philanthropy,” and it has both proponents and detractors (Russo, 2015). Proponents argue that the move towards outcomes investing has brought much needed rigor and focus to grantmaking, and when used judiciously and with flexibility, makes the collaboration and learning between grantmakers and grantees stronger. Detractors argue that outcomes investing can over simplify the uncertain path to solving complex social problems, that too many outcomes can make things bureaucratic and slow grant negotiations, and worse encourage grantees to focus on short term outcomes instead of the long term goal.

In College Ready’s design of their scale and spread strategy for targeted geographies, a critical first step has been defining the outcomes and quality indicators for each strategy target - quality implementation of the Common Core, systems to support effective teaching, and increased growth of personalized learning. These outcomes guide the priorities and investment strategies in each state team, operating somewhat like a flexible logic model mapping what conditions state teams need to invest to create in order to, for example, make progress on the
prevalence of Common Core aligned instruction, so that ultimately, more students achieve college and career readiness.

Our working group began with a draft set of personalized learning outcomes that were defined by the innovation team. These outcomes focused on increasing the number of schools that are engaged with practices that resemble the working definition of personalized learning (see Appendix C). This definition of the outcomes, while satisfying in its concreteness, demonstrated two fundamental problems that the personalized working group needed to wrestle with:

1. It takes an early hypothesis of what elements of personalized learning schools are most contributing to results, and by declaring them as the outcomes to guide investing, could contribute to the historical pitfall of encouraging adoption rather than focusing on codifying knowledge and developing dominant designs in the early adoption phase.

2. It represents a limited perspective on changes in the ecosystem for this innovation to succeed at broader scale (only public support and financial sustainability of schools). In the case of personalized learning, outcomes around innovation friendly changes in policy and accountability frameworks, student and teacher engagement to advocate for change, and building vibrant implementation networks are all particularly critical.

Ensuring that the working group picked up the work of revising these outcomes was one of the most important objectives for ensuring that the strategy building process was successful.

*Strategic Integration across Improvement and Innovation Teams*
Any strategy is only as good as the capabilities that team members bring to its execution. For our recommendations to succeed, our working group needed to identify what level of integration across the innovation and improvement teams was necessary to the current stage of development of personalized learning. We would need to determine what outcomes the innovation team would pursue, what outcomes state teams would pursue, and which outcomes they might jointly invest towards. We would also need to identify new means for learning and coordination as responsibility for personalized learning spread from one team to all team members.

**Long Odds – Identifying the Dependencies in my Theory of Action**

We faced long odds in successfully leveraging the working group to devise a strategy that supported College Ready to invest in the early stage adoption of personalized learning in ways that enabled it to eventually go to scale across the US K-12 education sector. The history of previous efforts to build a more effective pattern of schooling provide many lessons on missteps to avoid, but most of all, underscore the stubbornness of the “grammar of schooling.”

My review of the organizational development literature on ambidextrous organizations and managing these early points of integration between the innovation and improvement agenda also raised concerns about my ability to productively lead this change without being the CEO or at least a long-time senior leader (O’Reilly & Tushman, 2002, p. 206). This was a real risk to the success of my project, and I identified the key dependencies in the grey boxes in my theory of action (See Figure 8). I planned to address these dependencies in the following ways:
• **Lack of Formal Authority:** To overcome this challenge, I sought to “borrow” authority from my co-leaders, the Portfolio Managers from the three teams most implicated in this change, and from the executive sponsors who include Director Vicki Phillips and the four Deputy Directors from the improvement and innovation teams. My hypothesis was that in leveraging this borrowed authority and my own participative leadership style, I could invite people do to the complex work they would need to do to effectively build this strategy together without employing formal authority.

• **Not a CEO/Senior Leader:** I anticipated this would become particularly challenging when the strategy formation process called on our working group to identify and find productive ways to resolve tensions between the improvement and innovation agendas. While a CEO can use their formal authority to find integrative solutions, I strove to find ways to facilitate the groups’ process so that they neither avoided these tensions nor resolved them too simply. It required being brave enough to lean into the groups’ conflicts and wise enough to know when issues required executive sponsor input. I planned to invite the executive sponsors in to the working group’s discussions to the extent possible to address this risk.

• **Encouraging the key conditions for ambidextrous leadership:** Tushman and O’Reilly (2002, p. 171) outline three key characteristics of successful ambidextrous organizations – a) they have a strong commitment to a shared vision that encompasses their improvement and innovation work, b) they have senior teams with diverse competencies, who c) manage the tensions and opportunities of integration across improvement and innovation teams at the top. These three characteristics will be critical to ensuring that our strategy design is operationalized across the College Ready team and transformed into sound investments in
the early scale of personalized learning. While I could not control whether these things were in place, I could bring awareness to their importance and help the senior team deepen their exposure to the literature on ambidexterity.

The next section will describe my implementation of this theory of action, the results I achieved, and my analysis of why things unfolded as they did.
Forming the Working Group: Managing Membership & Building a Container for Adaptive Work

College Ready Director Vicki Phillips approved my proposal to lead a working group to design a strategy to integrate early stage investing in personalized learning into state plans in early November 2014. We determined that she would serve as the executive sponsor for the project along with the four Deputy Directors whose teams were most implicated in the strategy – the two innovation teams, innovation and markets, and the two improvement teams, states and improvement. Dr. Philips emphasized that this work should focus on applying the existing scale and spread strategy (Appendix A) to the goal of early stage adoption of personalized learning, rather than design a completely different framework for guiding investment strategy.

This shaped the core goals of the working group:

- Define an approach to investment in targeted geographies and key national partnerships to build towards personalized learning outcomes and 5% of students experiencing accelerated achievement in personalized learning environments.
- Approach applied by CA state team to 2016 plan revision.
- Diagnostic fact base begun for all other direct investment geographies.
- Agreed upon foundation resource deployment to support implementation.

Managing Membership

As a relatively new team member with an unusual insider/outsider status as a resident, I quickly realized that I needed to share leadership of the working group. I invited the Portfolio Managers, a senior role on each team that operates much like a chief of staff for each Deputy Director, from each of the other three sub-teams to serve as members of the project leadership team. I also sought approval from my mentor’s team’s Portfolio Manager to serve as his
representative on the project leadership team. All three Portfolio Managers agreed to join, and after a few planning meetings in which I drove the agenda, they suggested that I should serve as the project lead because of my smaller number of competing commitments. I was encouraged by this development and the trust it demonstrated in my motives and abilities. The collaborative leadership model was essential to building a process that was sensitive to the history and culture of the team and my co-leaders increased the credibility of the project within their sub-team and the broader College Ready team. We strategically selected group members from across the cross functional sub-teams within College Ready, comprising 14 total members, inclusive of the co-leadership and our project manager.

Building the Container for Adaptive Work: Diagnosis and Interventions

In the lead up to launching the working group, I conducted one-on-ones with each of the working group members to understand their familiarity with personalized learning, gauge their interest in serving on the working group, and begin to understand what shared purpose would resonate most deeply with them. These conversations helped me to begin to build relationships with working group members and gather useful input to our planning process. I also administered a survey (see Appendix D) to gather more detailed data on each team members’ hopes and fears for the working group, understanding and investment in personalized learning, theories that informed their thinking about scale, and perceived psychological safety in relationship to the broader College Ready team. The psychological safety questions were based on the work of Amy Edmondson (2012, p. 141).

My one-on-ones and the survey revealed two important realities that drove our culture building interventions. First, I became more in touch with the continuum of openness and
enthusiasm for investing in the scale of personalized learning. Personalized learning was incubated for 4 years in the “skunk works” of the innovation team, largely insulated from other team’s work. The prospect of investing in personalized learnings’ diffusion at broader scale implied significant, but different, changes to the mindsets and ways of working for each member according to their position in the organization. The innovation and market teams would need to invite other CR team members into a movement of innovative schools and products that they were instrumental in incubating, risking misinterpretations of their early stage innovation work and meddling from skeptics or traditionalists. The improvement and targeted geographies team would have to experience the temporary incompetence of learning about a new way of organizing learning, adapt plans that were in various stages of design and execution, and potentially revise closely held beliefs about how to achieve College Ready’s ambitious goals for impact. The teacher engagement and knowledge management team would need to make room to support personalized learning in addition to their work on the core strategies. The continuous improvement team would have to adapt their measurement system to encompass both fully developed and early stage strategies. It was not surprising then that the majority of working group members reported they were ambivalent about the goals of the working group (see Figure 10 for survey results). With all of this diversity of perspective, it became critical to meet people where they were, provide space for them to express their concerns and questions, and provide supports for the less familiar to learn more about personalized learning. It also underscored the need to frame the working group as a collective learning process to which each team member would make unique contributions (Edmondson, 2012).
Second, I discovered that the level of psychological safety that working group members felt toward their interactions with other College Ready team members was quite variable (see Figure 11 for survey results). Approximately half of team members reported that they felt that College Ready team members respected one another and that they were able to have candid conversations when “something bugs them.” A smaller fraction, 4 of 11, reported that they felt a sense of shared responsibility across the College Ready team. These results were not surprising to me given that high levels of psychological safety are rare in organizations.
(Edmondson, 2012, p. 134), and given the history of content specific silos in the previous organization of the team. Prior to the re-organization, most team members had limited opportunities to work with colleagues outside of their sub teams, so this level of psychological safety towards the broader College Ready team so early in the “one team” transformation was expected.

Understanding that psychological safety is a “local phenomenon” (Edmondson, 2012, p. 124), which can be altered by the frames that leaders bring to new tasks and the interactions that group members have with their new peers, we planned for framing, norm building, and norm enforcing activity that would contribute to a higher level of psychological safety between the members of the working group then they reported feeling toward the broader College Ready team at the time of the survey.

Responding to our diagnosis of variable understanding and investment in the aims of the working group and reduced psychological safety, we pursued the following priorities in establishing the appropriate culture for our task:
• **Establishing shared purpose**: We framed the working group’s charge around three things: achieving our shared goal for impact on students and growth of personalized learning schools, responding to early enthusiasm about personalized learning in ways that would result in more college readiness (not just faddishness), and learning and co-designing an investment strategy for state plans together by answering some key questions (see Appendix E). We returned to this frame and the working group’s goals at the beginning of each meeting.

• **Defining working group members’ roles**: To underscore the role each team member would play in achieving the strategy design goals, we outlined the collective roles that all team members would play in the kick-off meeting and then defined more specific responsibilities aligned to people’s functional expertise as the work group progressed. We framed working group’s participation within three roles: designer, doer, and ambassador. With this framing we emphasized that people would be learning and building the strategy together and that they would need to lead the change with their own sub-teams and the broader College Ready team.

• **Sharing teaming research and data**: In our kick-off meeting, I briefly shared Edmondson’s research on innovative teams, committed to leading the group in a manner that kept us in the “learning zone,” and challenged the group to operate by norms that would balance high accountability with high psychological safety. I also shared the data from the survey questions on the groups’ self-reported level of psychological safety to give people a sense of where we were starting and discuss strategies for building a culture supportive to our task.
• **Establishing (and returning to) norms of engagement**: We began by soliciting people’s suggestions of norms through the survey, synthesized these into a starting proposal, and revised them in the first meeting after our discussion of the teaming research (see Appendix G for norms). We returned to these norms at the beginning of each meeting, checked in on them at the end of each meeting with our “keep doing/change” reflections, and went back to them in discussions when we veered away from operating in alignment with them.

• **Modeling personalized learning and offering opportunities for exploration**: Given that people ranged in experience with personalized learning from having done the bulk of the grant making to seed it to having low to no awareness, I designed a “personalized learning playlist” that was organized around key questions that team members would have (see Appendix F). We regularly began meetings with reflections on our own experiences in schools and how personalization could have made a difference in our own experience.

**Designing Personalized Learning Scaling Strategy: An Overview**

We designed the project in three phases, the first two which we have completed at the time of this writing (see Appendix H). Phase 1 of the project was focused on learning about personalized learning, the challenges and opportunities of early stage scaling, and “aligning around” the outcomes that would guide state teams’ investments. Taking inspiration from the world of design thinking, this phase was intended to support the group in empathizing with the people in the field who we would be influencing to adopt personalized learning through our grant making and defining the core problem(s) we were seeking to solve. In this phase we also commissioned a landscape analysis of personalized learning activity in two of our targeted geographies, Colorado and California, for use in the next phase of the strategy design work.
Phase 2 we planned on co-designing the strategy recommendations for early stage scaling of personalized learning by grounding ourselves in the Colorado and California context through the landscape analysis, designing investment strategies specific to each state, and then stepping back to create general guidance to support the state teams with their investing. Our aim from this phase was to develop strategy guidance for state teams and identify the supports state teams would need from other teams. Phase 3 we intended to translate the high level strategy for personalized learning investments in Colorado and California to proposals for specific investments for 2016 while simultaneously designing a team-wide learning plan and recommendations for how College Ready could execute this work through structural and/or contextual ambidexterity.

**Phase 1: Defining the Problem of Early Stage Scaling**

After the context-setting kick-off meeting in December, the working group had a half-day retreat in early January (see Appendix I for agenda) which focused on the following three objectives:

- Teach out learnings from review of theories of scale and identify shared commitments to guide strategy design
- Strengthen our shared vision for the outcomes of scaling personalized learning by better understanding the MLI outcomes
- Empathize with key stakeholders in personalized learning adoption and identify potential on-ramps

Prior to this meeting, I selected literature on scaling innovation and asked members to choose one area to review and come with their thoughts on how it related to our challenge of early stage scaling of personalized learning. The goal of this activity was to help the group identify ways that early stage scaling of personalized learning may be different than their work on
Common Core and systems to support effective teaching, which had largely gone to scale through policy. The selections were a summary of Roger’s Diffusion of Innovation theory, Tyack & Tobin and Elmore’s work on the history of the progressive movement, Horn & Staker’s application of disruptive innovation theory to education in *Blended*, and a chapter from Sutton & Rao’s *Scaling Up* (which the College Ready team had read that summer). Each group “taught out” the key ideas from the theory they had reviewed and identified 3 major implications that it held for our strategy building. There was significant energy in the discussion around Roger’s idea of diffusion of innovation as a social process and the distinction between different adopter categories.

By this phase in the project, I had tabled my initial suggestions that the working group evaluate and redesign the personalized learning outcomes. The outcomes had been approved by the Deputy Director leading the innovation team and the continuous improvement team was already launching data collection. So rather than tune and improve these outcomes, we spent time in the meeting building familiarity with the outcomes, which were relatively new to members of the College Ready team.

We also used previously commissioned market research with parents and educators to think about personalized learning adoption from the perspective of four key stakeholders: families, teachers, school leaders, and system leaders. For each group we identified: problems fast adopters are seeking to solve with personalized learning, barriers to adoption, who the opponents to adoption might be in their social network and what their arguments are, and identified promising “on ramps” for that would help people overcome the barriers to adoption. This empathizing activity stimulated further discussion on the way that investing in personalized
learning in states at this early stage would be distinct from other investing in state plans. In the retreat debrief, working group members offered positive feedback on the design and facilitation of the meeting, the emphasis on empathizing with adopters, and the culture we were building. Constructive feedback focused on the need to further clarify our understanding of the personalized learning outcomes.

In a follow up to the retreat, our project leadership team synthesized our conclusions from our empathizing and exploring scaling theory into three design principles to guide our strategy work:

- Innovation diffusion is a social process; peer-to-peer interactions at each stakeholder level are central to the successful scale of personalized learning SO “grass roots” teacher engagement, implementation networks, and parent/community advocacy are crucial.
- Personalized learning helps teachers solve problems that they experience most acutely AND their adoption is constrained by all of the other actors in the system SO “grass tops” advocacy for enabling policies and local funding are critical to create fertile ground.
- To scale from innovators and early adopters, innovations must become easier, quicker, cheaper, and more advantageous over time SO our investments in fast adopters, TA providers, and implementation networks must contribute to codification and validation of knowledge for practice.

In our subsequent update to executive sponsors we shared these design principles and a more detailed definition of the process and deliverables we were proposing the working group
develop to support the integration of personalized learning investment into 2016 state plans (see Appendix J). The executive sponsors were generally positive about the direction that the working group was moving. However, in this check-in the Deputy Director of the innovation team flagged that he wanted to revisit the definition of personalized learning and the established outcomes. He raised concerns that the content of the outcomes was a hypothesis about what was leading to impact in these personalized learning schools, but that we wouldn’t have more concrete evidence on whether this was indeed the case until the fall 2015 release of Rand’s program evaluation. We agreed to work with him and the innovation team to determine a definition for personalized learning that was appropriate to the knowledge we had and the Portfolio Manager from the innovation team and I led two subsequent meetings with the innovation team to begin to create a shared definition. This group made some progress on aligning on desired outcomes for students, articulating how personalized learning was different from the improvement strategies, and generating a list of design principles that characterized personalized learning schools, without getting to the specificity of the original outcomes. However, we entered the next strategy building phase with considerable ambiguity about how we were defining personalized learning and the outcomes that mattered to achieve our 5% goal. Given this ambiguity, we invited the Deputy Director of the innovation team to join us and share his thinking at the beginning of our strategy building retreat, which he graciously agreed to do.

Phase 2: Building Strategy and Points of Integration Across Improvement and Innovation Teams

In February we brought the working group back for a two and half day retreat focused on the following objectives:
• Connect with Deputy Director of innovation team, on his vision for personalized learning
• Understand CO/CA personalized learning landscape
• Design and test strategies for accelerating scale and spread
• Generate improvements to landscape analysis process and deliverable
• Tune working group deliverables and division of labor

The agenda (see Appendix K) we designed aimed to spend the first day grounding in the innovation Deputy Director’s vision for personalized learning, learning about the landscape of personalized learning activity in Colorado and California, collectively engaging in a design process to build a strategy for investment in personalized learning in those two contexts and then determining what strategy guidance could be generalized for all state plans. The subsequent days were designed to hear perspectives from Andy Calkins, our anchor partner leading the Next Generation Learning Challenges that had supported the design and implementation of the personalized learning schools, and then refining our strategy recommendations through additional collective design activities. This retreat was also unique from our previous meetings in that we invited all of the members of the California state team to join us in the design process, which meant the California state team lead and one other California team member were joining our team for the first time. In addition, two of the executive sponsors leading the innovation teams, a trusted strategy advisor familiar with our improvement and innovation investment strategies, and the members of the innovation team were invited to join us at key points through the retreat to provide feedback and input on our evolving strategy development.

This strategy design process went very differently than planned. Once the teams engaged in the design activity in the Colorado and California team context, the subsequent
whole group discussion raised a number of the group’s concerns about whether personalized
learning was at a stage of development that warranted “spread and scale” through state team’s
investment. While people appreciated the transparency about what we knew and didn’t about
what was working in personalized learning schools, they now felt unclear about the outcomes
we needed to pursue to achieve the 5% goal, which left them confused about how to prioritize
among many potential investment strategies they could generate and uneasy about how to
communicate about personalized learning with key stakeholders in the state. As one state
team member put it, there was a feeling of “high accountability for personalized learning
outcomes, but limited support.” Responding to this need for defining what was known about
personalized learning, the innovation Portfolio Manager and I agreed to summarize where
personalized learning was in its development, what gave us confidence that it was ready for
early stage adoption (consistent with our 5% goal), and bring that back to frame a discussion on
the second day about how to advise state teams in the design of investment strategies.

The subsequent discussions throughout the retreat made slow, but steady progress
towards reaching agreements about how state teams could invest in the early adoption of
personalized learning and what additional work the working group members would need to do
to support them. By the beginning of the third day, the working group had developed a draft
“Personalized Learning Manifesto,” which included a frame of personalized learning as an early
stage innovation, some high level definition of outcomes, and recommendations for points of
integration across the improvement and innovation teams, including some early ideas about
how state teams could responsibly invest in personalized learning in state plans. We shared
this manifesto with two of the executive sponsors and the innovation team who offered helpful
feedback and affirmed the progress we had made. One executive sponsor encouraged the group to stay in the “messy design process,” acknowledging that the group was managing “uncharted territory” for College Ready: moving a promising early stage innovation to broader adoption and collective ownership across the team.

We closed this retreat with a number of next steps that individuals and smaller groups would take to continue the development of the strategy, including:

- The innovation teams would develop and better define the outcomes for personalized learning
- The California team would create a proposal for how they would take their initial ideas generated at the retreat and develop them to be included in their 2016 investment plan
- My co-leaders and I would create a complete draft of the strategy recommendations in the personalized learning manifesto
- The innovation team Portfolio Manager and I would build a presentation for the innovation team Deputy Director to share the vision for investing in personalized learning with the broader College Ready team
- The state team would refine the landscape analysis specifications and initiate that work in each of the other targeted geographies.

At this writing, each of these components is underway, although none are finalized or have been approved.
The aim of my strategic project was to form a working group and establish an effective culture so that we could collaborate to achieve the following outcomes:

- Define an approach to investment in targeted geographies and key national partnerships to build towards personalized learning outcomes and 5% of students experiencing accelerated achievement in personalized learning environments.
- Approach applied by California state team.
- Diagnostic fact base begun for all other direct investment geographies.
- Agreed upon foundation resource deployment to support implementation.

At this writing, there is work in progress to achieve the first three outcomes. The fourth outcome is a topic that the working group will discuss and make recommendations to the executive sponsors in April. The emerging strategy reflects the aspirations I outlined in my theory of action for the working group to frame the strategy as tackling early stage innovation, define outcomes appropriate to that phase of development, and define the appropriate level of integration across the improvement and innovation teams. I am cautiously optimistic that the working group and the executive sponsors are moving towards agreement about where the personalized learning innovation is in its development and how to best work together to put it on a path towards broader scale. I am also humbled by the work left to do in the design phase and the challenges ahead to engage the broader College Ready team in the change for 2016 investing and beyond.

In a survey of working group members 66% reported that they were confident we were on track to achieving our working group goals and 33% reported that they were “neutral” (see
Appendix L for a full summary of open ended comments). Where people are confident, their confidence follows from the discussions within the working group, the steps to define what stage of scaling we’re in and aligned outcomes, and the engagement of the working group members and executive sponsors. Those with concerns point to the need to define outcomes and the ambiguity about the relative level of investment that will be directed towards personalized learning. There is work underway to address both of these concerns.

The mid-project survey also revealed that we had achieved the stronger levels of psychological safety on the working group that we had aimed for with our interventions (see Figure 12). All respondents reported agreement that members of the working group respected each other, and a majority reported agreement that they could address issues that “bugged
them” and felt everyone took responsibility for the groups work. This culture of psychological safety was a resource in the progress we’d made by and will continue to serve as a resource to the working group.

In early March, we shared elements of the personalized learning manifesto with the CRLT and received positive feedback. Leadership team members appreciated our framing of the problem as devising a strategy for early stage development and scaling of personalized learning. They offered helpful feedback on how to refine our definition of personalized learning and make the transition between the work of the Next Gen team and this new chapter of shared responsibility for personalized learning more explicit. They agreed with our definition of the different roles that the innovation and state teams would play. And they were positive about our efforts to redefine the outcomes for personalized learning to both broaden the definition of personalized learning and identify the “enabling conditions” that would drive state team investing in states. Finally, they agreed with our proposal to customize our learning and planning supports for each state team based on the level of awareness among team members and the information that we gathered through the landscape analysis. Overall, the meeting affirmed the draft strategy we presented and the direction we proposed we would continue to take the work.
Ambidextrous Transitions as a Change Management Challenge

Perhaps the greatest lesson for me and the working group has been the realization that our original charge to “integrate personalized learning into state plans” was just one step in a much larger change effort inside the College Ready team. My review of the ambidexterity literature had raised my awareness about the centrality of change management to organizations attempting to harness innovations (O’Reilly & Tushman, 2002). However, in reflecting back on my theory of action and my experience leading this project, I see that I took a teaming and strategy design frame, without explicitly situating the project in the broader context of an ongoing change management process that was begun with Dr. Phillips’ reorganization of the College Ready team in the spring of 2014.

I will analyze our progress to date using Kotter’s 8-step process for leading change (J. P. Kotter, 1995). Among the many change management frameworks, I have chosen Kotter’s both because of its ubiquity and because of its familiarity to many team members on the College Ready team. Kotter (2011) argues that significant change efforts take years, and pressured to accelerate the process, many managers take shortcuts and fall into predictable pitfalls. He outlines the four phases and 8 steps of any successful change effort (J. Kotter, Rathgeber, & Johnson, 2006). First, leaders must set the stage by creating a sense of urgency and forming a powerful guiding coalition. Second, they need to decide what to do by developing a change vision and strategy. Third, they need to make change happen by communicating for understanding and buy-in, empowering others to act, producing short-term wins, and
consolidating improvement to produce more change. Finally, organizations need to make the change stick by institutionalizing new approaches, thus baking the change into the organizational culture (see Figure 13 for all 8 steps and the common pitfalls).

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<tr>
<th>Stage</th>
<th>Action Needed</th>
<th>Pitfalls</th>
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<tbody>
<tr>
<td>Establish a sense of urgency</td>
<td>• Examine context for potential crises and untapped opportunities.</td>
<td>• Underestimating the difficulty of driving people from their comfort zones.</td>
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<td></td>
<td>• Convince at least 75% of managers that the status quo is more dangerous than the unknown.</td>
<td>• Becoming paralyzed by risk.</td>
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<tr>
<td></td>
<td>• Underestimating the difficulty of driving people from their comfort zones.</td>
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<td></td>
<td>• Becoming paralyzed by risk.</td>
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<tr>
<td>Form a powerful guiding coalition</td>
<td>• Assemble a group with shared commitment and the power to lead the change.</td>
<td>• No prior experience in teamwork at the top</td>
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<td>• Encourage them to work as a team outside the normal hierarchy.</td>
<td>• Relegating team leadership to an HR, quality, or strategic planning staffer rather than a senior leader</td>
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<tr>
<td>Create a vision</td>
<td>• Create a vision to direct the change effort.</td>
<td>• Presenting a vision that’s too complicated or vague to be communicated in 5 minutes.</td>
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<td></td>
<td>• Develop strategies for realizing that vision.</td>
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<tr>
<td>Communicate the vision</td>
<td>• Use every vehicle possible to communicate the new vision and strategies for achieving it.</td>
<td>• Undercommunicating the vision.</td>
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<td></td>
<td>• Teach new behaviors by example of the guiding coalition.</td>
<td>• Behaving in ways antithetical to the vision.</td>
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<tr>
<td>Empower others to act on the vision</td>
<td>• Remove or alter systems or structures undermining the vision.</td>
<td>• Failing to remove powerful individuals who resist the change effort.</td>
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<td></td>
<td>• Encourage risk taking and nontraditional ideas, activities, and actions.</td>
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<tr>
<td>Plan for and create short-term wins</td>
<td>• Define and engineer visible performance improvements.</td>
<td>• Leaving short-term successes up to chance.</td>
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<td></td>
<td>• Recognize and reward employees contributing to those improvements.</td>
<td>• Failing to score successes early enough (12-24 months into the change effort).</td>
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<tr>
<td>Consolidate improvements and produce more change</td>
<td>• Use increase credibility from early wins to change systems, structures, and policies that undermining the vision.</td>
<td>• Declaring victory too soon – with the first performance improvement.</td>
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<td></td>
<td>• Hire, promote, and develop employees who can implement the vision.</td>
<td>• Allowing resistors to convince “troops” that the war has been won.</td>
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<tr>
<td></td>
<td>• Reinvigorate the change process with new projects and change agents.</td>
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Applying Kotter’s framework to the overall transformation on College Ready, one can see that there were many elements of effective change evident in the original effort to build “one team” responsible for shared improvement and innovation goals. Dr. Phillips generated urgency about having broader and deeper impact, a guiding coalition in the form of the first “spread and scale” team was established that included both members of the CRLT and key leaders from across the team, they built a vision focused on the shared targets for teacher effectiveness and innovation, they communicated that vision consistently and enabled others to act on the vision by designing a new team structure and a shared task in the form of building state plans to invest in targeted geographies. By my arrival in the summer of 2014, this transformation was launched to the entire team. I observed team members engaging in new collaborative behaviors across the old strategy silos in the state teams while the newly formed functional teams defined new activities for serving the common goal. And while it is too early to identify “early wins,” there is evidence of promising early inputs like the creation, approval, and resourcing of state plans in three of the eight targeted geographies by February 2015.

However, all of this transformation has unfolded organized around only one portion of the original vision – the improvement strategies focused on increasing teacher effectiveness aligned with the Common Core. The innovation target to expand the impact of personalized learning was left out of this first round of “one team” transformational activity. While the
original vision called for a new College Ready that was both more collaborative and more ambidextrous, only the collaborative aspect has been enacted. Ironically, observing this gap between the espoused vision and the work of the team was a major impetus for my proposing to lead the working group. Despite this assessment, I did not emphasize this frame with the executive sponsors or my co-leaders from the outset. Upon reflection I see that in an effort to achieve authorization to lead the project as a “no status” resident, I adopted the de facto strategy formation frame rather than raising the broader change management frame.

Seeing the working group in the context of this broader change effort, a more productive frame for our task was as an effort to further the change process by addressing “systems and structures that are not consistent with the transformation vision (J. Kotter, 2011, p. 15).” Our target was transforming a system for building state plans that is solely focused on the improvement priorities and adapting a team structure in which only the innovation team is responsible for the innovation agenda. To do this effectively, our working group needed to address each of the eight stages of change.

The major strengths of our approach have been the involvement of a cross-functional guiding coalition that includes the California team who can model the behaviors that other state teams will need to adopt and our focus on empowering others to act on the vision for great ambidexterity by influencing how they build state plans. The most significant weaknesses

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7 In conducting this analysis I went back to review my original proposals for forming the working group and the kick-off deck framing our task together. I discovered some allusions to ambidexterity and transformation in statements like: “Focused on scaling an early stage innovation: will test CR’s ability to operate ambidextrously; creating an on-ramp for innovation” and “Adapting theory in play: applying the scale and spread framework to address personalized learning may be transformative to our implementation of the other core strategies; will require adaptive change across College Ready.” There were no explicit references to the working group’s place in the broader change management process on College Ready.
of our approach have been not having a senior leader driving the working group and the need to build a more emotionally resonate vision. Figure 14 outlines the strengths and weaknesses of the approach we’ve taken to date against Kotter’s criteria for successfully leveraging each phase.

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<tr>
<th>Stage</th>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
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<tbody>
<tr>
<td>Establish a sense of urgency</td>
<td>• We have articulated the risks and opportunities of not pursuing innovation in our discussions with the working group and in the manifesto and communication tools for the innovation Deputy Director.</td>
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<td>• Kotter (2011, p. 6) advises that having the “division head” communicate the need for change is key. The Director has articulated the need for innovation in the media and established the original vision of shared accountability for improvement and innovation.</td>
<td>• We have not yet planned for or secured the commitment of the Director to articulate the sense of urgency for more shared responsibility for innovation and we are relying on the Deputy Director of the innovation team to begin to make this argument.</td>
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<td></td>
<td>• We could make the call for change more emotionally resonant with team members.</td>
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<tr>
<td>Form a powerful guiding coalition</td>
<td>• The group we’ve assembled is cross-functional and has demonstrated a shared commitment to lead the change by influencing members of their sub-team and the state teams they sit on.</td>
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<td></td>
<td>• We have spent concentrated time together designing the strategy for change.</td>
<td>• State team leads are key to leading this change. We have included one state team lead in the group, but likely should have included more and/or made sure that there was representation from each state team in the group.</td>
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<td>• We have executive sponsorship from the Director and four Deputies whose teams are most implicated in this work.</td>
<td>• Kotter (2011) warns against “relegating team leadership to a staffer rather than a senior line leader.” Neither I, nor my co-leaders, are senior leaders.</td>
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<tr>
<td>Create a vision</td>
<td>• We are building a vision and identifying ways that senior leaders can succinctly communicate it.</td>
<td>• There is still much to do to further develop this vision into something emotionally resonate across College Ready and my timeline for the project underestimated the time that this would take.</td>
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<tr>
<td>Communicate the vision</td>
<td>• We have influenced the Deputy Director of the innovation team to share the vision.</td>
<td>• As staff level leaders, we do not have access to all of the communication channels and have</td>
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</table>
• We have planned to teach new behaviors through the example of the California team.
• We have planned for sharing the vision and teaching new behaviors in co-designing personalized learning strategies in collaboration with each state team.
• We have not yet secured agreement to use high leverage channels like team-wide meetings/retreats.
• We have not yet asked the Deputies leading the improvement teams to communicate the vision.

**Empower others to act on the vision**

• We are “encouraging risk taking and nontraditional ideas, activities, and actions” with our strategy design approach.
• We plan to identify the structures and incentives that will empower state teams to do this work.
• Our recommendations about adapting structures and incentives may not be implemented.

**Plan for and create short-term wins**

• Defining the appropriate outcomes will enable us to target short term wins.
• We have not explicitly planned for short term wins (Kotter recommends within 12-24 months)

**Consolidate improvements and produce more change**

• The Deputy Director of the innovation team has the opportunity to hire new team members who can model ambidexterity.

**Institutionalize new approaches**

• The Director is a strong role model of ambidextrous leadership.
• We have not considered how we can create “new social norms and shared values consistent with changes”

Not employing a change management frame for the working group from the outset has had two significant ramifications:

• We have not addressed each of the key phases of the change management process in our plans. This could mean that our efforts to design a strategy aligned to the challenges of early stage innovation will be necessary, but insufficient, to enacting the ambidexterity aim of this transformation.

• I did not achieve explicit alignment with the executive sponsors or my co-leaders on the ways this working group is connected to the broader change management effort. This
has made it difficult to ascertain whether this frame is shared across the leadership group. Without this explicit alignment, I have struggled to compel both my co-leaders and executive sponsors about the necessity to address some of the weaknesses in our plans that are outlined above.

These consequences are surmountable and I will continue to use my influence to try and implement strategies to address some of the weaknesses outlined above. I will now analyze how I operated as an intrapreneur to achieve these results.

**Leading as an Intrapreneur**

Throughout this project I have been struck by the parallels between the challenges a foundation faces in using its relatively limited resources and influence to transform a democratically governed institution and those of a resident seeking to influence a large foundation. Neither have direct control over the object of their change efforts. Therefore, both involve entrepreneurship, or “the pursuit of opportunity without regard to resources currently controlled (Stevenson, 1983).” I came to think of myself as an intrapreneur, given that I spent my residency operating as an entrepreneur inside a large, established organization. I will analyze how I led my project through this lens.

The role of resident gave me a unique, liminal status within the College Ready team. I had no formal authority over resources or other people. I had no defined responsibilities beyond those I negotiated with College Ready leadership, my colleagues, and my advisors at

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8 The term intrapreneur was first coined by Gifford Pinchot and is defined as “one who takes a hands-on responsibility for creating innovation within the organization (Pinchot, 1985).”
Harvard. I was a member of both the improvement and innovation teams, but because of my dual membership and resident title, I often felt as if I was not granted full membership on either team. Without the regular signals of status within the organization (title, team, size of portfolio managed), I was not “low status” but “no status.” Rather than see this condition as a limitation, I came to see it as a tremendous opportunity to contribute to the vision that had attracted me to the College Ready team.

There is limited literature on intrapreneurship, and none that I could find focused on operating as intrapreneur in the non-profit setting. I adapted the following framework from SustainAbility’s (2008) report on social intrapreneurs, who they define as “someone who applies the principles of social entrepreneurship inside a major organization” and “one characterized by an insider-outsider approach (p.4).” They depict intrapreneurship as involving the following activity:

1. Getting it: Having the aha! about a particular opportunity to address a social problem from within an organization.

2. Selling it: Selling your idea in order to acquire the resources needed to make it happen. This phase requires: networking, courage, diplomacy and intelligence gathering, and opportunism.

3. Doing it: Executing the idea with a particular focus on early wins to maintain momentum.

I chose the College Ready team for my residency because I was intrigued by the personalized learning movement. I wanted to learn more about the design and impact of the
innovative school models, and contribute to this movement for learning environment innovation in a productive and responsible way. I was originally charged with researching and writing a white paper about the potential intersections between College Ready’s teacher development strategies (particularly evaluation driven systems to support effective teaching) and their desire to expand personalized learning. I began this project with interest and enthusiasm, as it leveraged my own experience implementing an evaluation driven teacher development strategy at Teach for America and Houston ISD and my interest in learning environment innovation. Eventually however, I had an aha! The team had not identified how they were going to invest in early stage scale of personalized learning. Trying to offer recommendations about the potential interactions between the improvement and innovation agendas in a white paper seemed unlikely to illicit change until the team had embarked on the work of shared implementation. I wondered if I could lead a working group to design a strategy to integrate personalized learning into the state plans, as had been intended in the original change effort?

Selling the idea involved networking, opportunism, courage (with humility), and diplomacy. Building relationships with the members of the innovation team and other influential members of the College Ready team was integral to gaining support from colleagues as I tested the idea and sought authorization from CRLT. I was opportunistic, recognizing that this was work that needed to be done but that a) few had bandwidth to lead as the team adapted to their new organization and responsibilities and b) could be ideal for an insider/outsider who had no history as either a member of the improvement or innovation team. I blended courage with humility, requesting authorization to lead the working group
from my mentor and eventually Dr. Phillips and the executive sponsors with an authentic interest in serving the College Ready goals and vision, but without any assurance that they would agree. And I was diplomatic, quickly recognizing that I would need to co-lead the working group both to have the insight it would require into the culture and politics of the team and to “borrow” status and credibility from my co-leaders.

Much of the groundwork I laid in the selling phase, has aided me throughout the execution of the project. I have relied on a broad network of informal advisors within the working group and across the College Ready team. As I’ve understood the politics of the team better, I am confident that without the co-leadership structure I would not have had the status to illicit the deep engagement we’ve achieved from working group members and some of the executive sponsors. And it has continued to require courage and humility to surface conflicts and issues within the working group, my co-leadership group, and among the executive sponsors. I have aspired to lead in ways that keep the group in what Heifetz, Grashow and Linsky (2009) call the “zone of proximal disequilibrium,” generating enough heat to maintain momentum towards more shared responsibility for innovation, but not so much that our working group explodes. One group member provided feedback in the survey that I struck this balance well, “you’ve done a great job of continuing to keep the group on track, while also maintaining the flexibility to address new issues that have arisen.”
Adapting My Theory of Action

Based on my analysis of my current results, I would adapt my original theory of action to approach our task through a change management, rather than a strategy formation lens. This would lead to the following changes (see Figure 15 for adapted theory of action):

- Aligning with Dr. Phillips on how this work connects to her broader change agenda and how I could support her or a deputy in leading this project.
- Selecting working group members who are representative of each state team and cross-functional team.
- Sharing a change management framework with the working group and including planning for each of the stages of the change process in our task.

These changes to my approach would have addressed some of the dependencies that stemmed from my lack of formal authority, although achieving the ultimate goal would still depend on the shared commitment to the improvement and innovation goals, the composition of the leadership team, and their functioning.
Support Director or Deputy to design working group process

Manage membership: cross-functional and state team reps

Align with director on role of working group in broader change process

Design effective strategy for early stage diffusion of innovation and CR change management process

Frame problem of early stage diffusion

Diagnose and plan change process to support innovation goal

Define outcomes

Integration across improvement/innovation

Investments that accelerate early stage diffusion of innovation and prepare for scale; collective responsibility for innovation across CR

Commitment to shared vision

Composition & functioning of senior team

Key
- Stages of work
- Leadership actions
- Dependency
Implications for Self

I am incredibly grateful for the opportunity I’ve had to lead and learn with all of the members of the College Ready team. My experience in residency has cemented my belief that this era demands a new paradigm for management and leadership, a move from Taylor and Ford to Reis and Amazon. I have been challenged by what this demands from leaders like myself who cut their teeth on the theory and practice of scientific management and face the monumental task of repurposing industrial era organizations for the information age. This challenge is as true for foundations and the non-profits they fund as it is for the education systems they seek to influence. I immerse from this experience with two new and useful frames for 21st century education leadership: leading ambidextrously and living life as an experiment.

Leading ambidextrously requires vision, architecture, and change management

In our rapidly changing world, the primary challenge for the 21st century education leader is to lead organizations and systems that can both continuously improve their current means of serving students and communities while simultaneously pursuing new means of meeting the changing needs of society. They must walk the well-worn trails of learning and human development and “make new roads by walking,” based on new demands from constituents and society, new knowledge about how learning happens, and new technologies. This
ambidextrous intention requires that leaders are visionary, demonstrate the organizational leadership skills to build a culture and formal organizational structure for continuous learning, and employ the change management skills to succeed in critical transition periods.

Visionary leadership is one of the strengths I bring to the challenge of leading in the information age. Visionary leaders are described by Tushman and O’Reilly (2002, p. 186) as those that “are able to emotionally engage their organization at whatever level they operate,” by influencing “their colleagues’ values, goals, needs and aspirations through their relentless attention to shaping interpretations and creating a sense of purpose.” My Leadership 360 feedback in the spring of 2012 from 17 peers, direct reports, and managers across Houston ISD revealed that “purposeful and visionary” leadership was one of my greatest perceived strengths, with people reporting I was in the 98th percentile among all of the leaders they knew. This ability to shape how groups interpret their context and engage with a common sense of purpose served me well in strategy design activity during the working group.

My experience has taught me that visionary leadership is necessary, but not sufficient, to leading ambidextrously. Taken too far, visionary leaders can over interpret for their organizations, concentrating meaning and decision making at the top. Visionary leadership of improvement and innovation are contradictory. To drive improvement, a leader must build shared understanding of the goals and strategies so that members of a team can execute against them. At its core, a vision in the improvement context is having a compelling “answer” to the questions the organization most needs to answer to succeed. However, as Furr and Dyer have observed, “innovation is at heart a process of discovery, and so the role of the person leading it is to set other people down a path, not to short-circuit it by jumping to a conclusion
right at the start.” Therefore, ambidextrous leaders must couple the ability to engage their organizations in their overarching vision for continuous innovation with the culture and formal organization to support their dual agenda.

Ambidextrous leaders are architects of the formal organization and cultures aligned with their goals for innovation and improvement. I have learned a great deal from exploring how Dr. Phillips and her leadership team used structural ambidexterity to successfully incubate personalized learning. This was not as simple as creating a separate team on the organizational chart. For the innovation Deputy, it required intentionally building a culture where team members on the Next Gen Team could take risks and imagine an alternate future for school systems, inside a broader team focused on continuous improvement. And for Dr. Phillips, it required managing the inevitable conflict between the evolutionary and revolutionary agendas within her leadership team and making decisions about how much autonomy to grant the Next Gen team. As a leader who has prided herself on her ability to create “aligned” cultures on my teams, I recognize that in periods of structural ambidexterity, this is not always a virtue. I have been humbled by the demands that “hosting multiple, internally inconsistent architectures, competencies, and cultures” (O’Reilly & Tushman, 2002, p. 167) places on a leader to embrace complexity and manage conflict.

I was lucky enough to participate in, and contribute to, College Ready’s transition period from incubating an innovation through structural ambidexterity to creating the conditions to support collective ownership for innovation across the organization. In both observations of the broader change process and my own leadership of the working group, I have seen how challenging it can be to discern when and how to move an organization from its current
strategies to embrace new innovations. My most significant takeaway is that in order for organizations to successfully embrace new innovations, leaders must build a culture and organizational structure that is “organized to learn” (Edmondson, 2012). This requires a shift from designing and leading organizations as mechanical systems controlled at the top, to designing and leading complex adaptive systems that self-regulate in response to internal or external disruptions (Edmondson, 2012, p. 23). As Edmondson has observed, this “learning imperative requires relinquishing control as the ultimate goal” and building the capabilities within the organization to learn and adapt. The reorganization that Dr. Phillips initiated in the spring of 2014 has succeeded in building an organizational structure that can operate as a complex adaptive system that supports collaboration and innovation, and I have learned a great deal from observing that process and the early days of people’s work within it.

I expect that the rest of my career will be spent leading organizations where at least part of the challenge will involve helping people (myself very much included) transition their meaning making and strategies from those suited for the predictable industrial era to those better suited for the uncertain information age. This demands insight into how to lead change, and there are three lessons that I am taking away from this experience:

- **Manage the change over years, not months:** I perceive College Ready as being on a 3-5 year change process towards a more collaborative and innovative team that is better suited for addressing the complexity of the system they’re seeking to influence. I underestimated the magnitude of this change and the role the working group played within it. From this experience I have learned a powerful lesson in
being vigilant about connecting individual strategy formation to the broader change effort.

- **Be impatient for profit, patient for growth:** Dr. Phillips and her leadership team have modeled this mindset in their approach to personalized learning. The early stage aim of the 5% personalized learning goal signals that College Ready is committed to giving the personalized learning movement time to develop and demonstrate efficacy before encouraging widespread adoption at scale. Building this mindset into the culture is critical to ensuring organizations don’t just continuously change, but adapt in productive ways.

- **Avoid the cult of innovation:** I have a bias towards innovation. Impatient for our schools to meet the needs of every child, I am eager to see a new, more responsive pattern of schooling take root in US K-12 education. However, not everything needs to be blown up. Some consistency of structures and processes that work are useful to retain for both the benefit of teachers and students (or members of organizations in transition). I have realized that asking what is working and can be leveraged is as important to an ambidextrous leader as asking what needs to change.

**Leading as the Chief Experimenter**

What I’ve described above are my lessons about things I’ve learned 21st century education leaders need to do. What follows are my reflection on ways 21st century education leaders need to be. At Harvard I was introduced to an approach to adult and organizational development known as the “immunity to change process” (Kegan & Lahey, 2009). Kegan and Lahey argue that when we aim for adaptive changes in ourselves or our organizations, we are
often working against “competing commitments” that run directly counter to our explicit goals. 

As a leader I may want to become more open to feedback, but I also want to be perceived as “having it all together.” As a teacher I may want to have my students drive their own learning, but I also want them not to struggle or experience failure. As an organization, we may want our employees to innovate, but we also want to avoid any failure. Our competing commitments are underpinned by a big assumption, a way of making sense of the world that is usually so implicit and tightly held that it becomes a frame through which we perceive reality. In the case of the leader seeking to get better at inviting feedback, this big assumption might be: if people don’t see me as having it all together, then they won’t follow me. For the teacher attempting to have their students’ drive their learning, it might be: if my students struggle then I am a failure. For the organizational leaders seeking to encourage innovation, it might be: if we fail, our reputation will be ruined. Overcoming our immunity to change requires first understanding our competing commitments and big assumption, then running small and modest “experiments” to challenge, and eventually overturn, the big assumption. In turn, eliminating invalid big assumption increases our ability to perceive and effectively respond to complexity in the world around us.

At Harvard I used the immunity to change process to tackle my own development goals and led a class of graduate students to learn and apply the process in their leadership. I have come to see the construct of “leading as an experimenter” as an incredibly valuable one in my own development and leadership. If leading ambidextrously ensures 21st century leaders continuously transform organizations, “leading as an experimenter” helps them to continuously transform themselves. In their survey of companies that are thriving in the face of uncertainty,
Furr and Dyer have also found this disposition of being the “chief experimenter, not the chief
decision maker” (2014, p. 48) to be a distinguishing characteristic of successful leaders of
innovation. The residency process was a particularly rich experience in leading as an
experimenter, both because the capstone process asked me to construct, test and reflect on a
personal theory of action (something I had never done so explicitly before in my leadership),
and because my status as a “learner at work” gave me the mindset and many more
opportunities to experiment. I learned a few key things from this experience:

- **Holding frame’s explicitly, but tentatively, with teams:** While I created a theory of
  action to guide my approach to the project, I only communicated it implicitly to my
  executive sponsors and co-chairs through my framing of the project. I have learned
  that getting agreement on the front end about what frames we’re bringing to the
  work, even selecting among options (is this a strategy project or part of the larger
  change effort?), could be helpful in allowing members of a team to interpret new
  information and adjust their frames together.

- **Testing helps me be bolder:** adopting hypothesis generating and testing as a way of
  life has meant that I can be braver about taking risks in my leadership because each
decision or action is not “who I am as a leader” but “how I’m experimenting with my
leadership this time.” This requires that I am more conscious of the theory driving
my leadership choices and more clear about what data I would gather to know if the
experiment is “working.” As a consequence I am less fearful of facing the reality of
the situation and learn more from experiments whether I achieve my aims or not.
• **Responsibly using the hypothesis testing of the past:** In adopting an experimenter’s mindset and exploring the history of past efforts to transform school, I’ve come to see that many of the theories of action education reformers hold today have been attempted in the past. Our a-historicism as reformers can limit our ability to learn from these previous experiments and reduce our resonance with people that already lived some permutation of our “innovative new theory.” Context can change, creating new opportunities for “old” theories of action, so this is not to say that we should never attempt strategies for change that have already been implemented. But it does mean that if we care to study them, the past offers us many cheap, low effort experiments to learn from.

The complexity of the world’s problems are daunting, and as one of the sources of human ingenuity, education systems and education leaders must develop and adopt new approaches to rise to the challenge. Straddling the improvement and innovation teams in a transitioning ambidextrous organization has taught me a great deal about the demands this context places on leaders. 21st century education leaders must be able to manage learning and execution in order to develop innovations and bring them to scale. To do this, they need both the skills to continuously transform their organizations and the habit of mind to continuously transform themselves.

**Implications for Site**

As I have described above, there is much I have learned from my residency on the College Ready team about how ambidextrous leaders incubate an early stage innovation.
Structural ambidexterity was critical to seeding the early and promising experiments in organizing learning environments to be more responsive to students and society. Very few organizations in education have proven themselves capable of building more adaptive learning environments, and for College Ready to have invested in the schools and tools that are showing so much early promise is a huge and exciting development for the field.

Based on my observations and project leadership on the College Ready team, I offer recommendations on how the team could continue to develop the capabilities to invest in the personalized learning movement for broader impact across the sector. I see the seeds of many of my recommendations are already being sown by College Ready’s leaders, so I offer these recommendations as encouragement and extension of these emergent efforts. I also acknowledge that I am a student of innovation and organizations who has sought to contribute to the team’s goals by co-leading a working group, so my recommendations are shaped both by the frames I’ve brought to this work and the role I’ve played on the team. I will organize my recommendations around *what* College Ready can do to invest towards the healthy early stage scaling of the personalized learning movement and *how* Dr. Phillips and the CRLT can lead this change.

**What: Leverage the period of early stage adoption to prepare for broader scale**

To overcome the pitfalls that many movements for learning environment innovation have encountered in the past, College Ready must leverage this period of early stage adoption to prepare for broader scale. While the team has succeeded in pursuing investment strategies to seed early innovations (through the Next Gen Portfolio) and has built a strategy for broader scale and spread of fully developed innovations (the scale & spread framework and state plans),
the College Ready team needs to better define its approach to the integration period between seeding innovation and scaling. I propose a model that could assist College Ready in thinking about the aims of this phase, the investment strategies appropriate for achieving those aims, and the ways the College Ready team could collaborate to maximize their impact and prepare for scale.

To leverage this model, it is first necessary to understand the differences between the three different adopter categories College Ready is seeking to influence and learn from through their investments at each of these phases. To do this I will draw on scholarly and popular interpretations of the diffusion of innovation research of the last five decades (Moore, 2014; Rogers, 2003). Innovators are venturesome, cosmopolitan, boundary crossers who launch an innovation in a system through their desire to transform their industry (see Figure 16 for

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**Figure 16: Diffusion of Innovation Curve**

- **Innovators**: 2.5% by 2019, very early in this work, want to transform, build from scratch.
- **Visionaries**: 13.5% Early Adopters, want a breakthrough and take risk on big idea.
- **Pragmatists**: 34% Early Majority, committed to steady improvement and want to know it works.
- **Conservatives**: 34% Late Majority, believe more in tradition than progress, buy in when not doing so becomes inconvenient.
- **Laggards**: 16% Laggards, last to buy-in.

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Adapted from *The Innovator’s Dilemma* (2014) by Clayton M. Christensen, and *Diffusion of Innovation* (2003) by Everett M. Rogers.
innovation diffusion curve). They make up a small proportion of actors in a social system, 2.5% according to diffusion of innovation theorists (Rogers, 2003), and are willing to build new ideas and approaches from scratch. Early adopters make up a slightly larger proportion of a system, 13.5% according to Rogers (2003), and are respected visionaries who are willing to take a risk on a big, partially developed idea to achieve a breakthrough and serve as opinion leaders in their respective systems. The bulk of any system, 68%, are composed of the early and late majority. The early majority is particularly critical in scaling innovations, as they are the pragmatists who are committed to steady improvement and are judicious about their innovation adoption decisions. They wait to adopt a new innovation until it has been proven and much of the uncertainty has been eliminated through the development of models, tools, and defined organizational transformation strategies. Once the leading edge of this group adopts, the innovation is more likely to “cross the chasm” and be adopted by others in the majority who are even more conservative in their innovation adoption decisions (Moore, 2014).

I have adapted Seelos & Mair’s (2013) organizational capacity for continuous innovation model to depict the overlapping set of investment activities that College Ready engages in to invest in innovations to develop for scale (see Figure 17). This model depicts how College Ready has invested in seeding innovative models through RFP driven challenges and grants to develop innovative instructional models. Simultaneously, College Ready has invested in quantitative and qualitative research on these innovative models to evaluate their effectiveness and begin to understand what makes them work and how systems transform themselves. Recent investments in districts’ design of personalized learning models through NGSI and future investing through state plans have initiated a period of experimenting, consensus and
awareness building with early adopters. This is the critical phase of early adoption that provides College Ready and the field with the opportunity to test and develop multiple patterns for organizing learning and strategies for systems to move towards these patterns, while building the enabling conditions in the form of friendlier policy frameworks, data and technology infrastructure, and most importantly, stakeholder demand to fuel future adoption. If leveraged effectively, this period can support the development of proven scalable instructional models, tools and system on-ramps that will enable broader adoption by the majority in a system. This is when high leverage investment in broader adoption is possible through investment strategies like those suggested in the scale and spread framework.

Layering this process of developing innovations for scale over what we know about the values and demands of different adopter categories, suggests that College Ready could succeed in investing in early stage development of personalized learning if it conceived of and collaborated around innovation development in the manner outlined in Figure 18. In this
diffusion-focused model of innovation investing, the innovation and state teams continue to focus on their respective core business: agile, higher risk investing to seed innovations and high leverage investing to achieve broader scale and spread of proven innovations. However, our working groups’ examination of the demands of developing an innovation for broader scale suggest defining a third more collaborative form of investment behavior across the innovation and state teams:

- Co-invest in teacher, school and system leader early adopters working in implementation networks to develop proven, scalable designs, tools and system on-ramps.

- Innovation and advocacy teams invest to create national enabling conditions for broader adoption and state teams further that work in their specific geographies.
(particularly innovation friendly policy frameworks, data and technology infrastructure, and building student, parent, and teacher demand for change).

Capitalizing on this period of early adoption for integration and preparation for scale has the benefit of strengthening the development of the innovation and building the expertise of the state teams over time in preparation for broader investment. It presents a challenge in that it asks teams with two different investment strategies to collaborate and balance an emphasis on learning, research, and evaluation with an emphasis on execution and continuous improvement. This will require a cultural shift on the College Ready team, one which is already in development, and that I make recommendations for how to accelerate below.

**How: Organize to learn**

Operating as an adaptive complex system, rather than a mechanical system directed from the top, is a prerequisite to the collective ownership for innovation that will be necessary for College Ready to invest in personalized learning’s early stage scaling. In reorganizing College Ready, the CRLT has taken a team that was organized to execute against three ambitious, but discrete, objectives and created an architecture to support collective learning. The team now has shared goals, shared measurement, and a pattern of teaming around targeted geographies that has the potential to contribute to powerful collective learning and innovation. This is an exciting development, however, this new formal organizational structure is only as good as the culture and competencies of the people within it.

Achieving the goals for a more collaborative and innovative College Ready is still a work in progress, and is likely to take a number of years to realize. It is evident by the actions of Dr.
Phillips and the CRLT that they acknowledge this and are identifying ways to engineer and celebrate short-term wins and consolidate improvement to produce more change (steps 6 and 7 of Kotter’s process). This is evident in the emphasis on rewarding employees for new collaborative behaviors including recognition of individuals for productive collaborations and state teams who have successfully collaborated to build new plans for investing for impact in targeted geographies. Collective learning and pursuit of innovation were also behavior changes implied by the re-organization. As CRLT continues to drive this change, I recommend the actions outlined in Figure 19 to encourage these new desired behaviors:

<table>
<thead>
<tr>
<th>Figure 19: Organizing to Learn Actions</th>
<th>Collective Innovation</th>
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<tr>
<td><strong>Collective Learning</strong></td>
<td><strong>Collective Innovation</strong></td>
</tr>
<tr>
<td>• Ask teams to make transparent in their grant proposals what hypotheses they and/or their grantees are testing; reward teams for validating or invalidating hypotheses and sharing their learnings within College Ready, and externally where appropriate.</td>
<td>• Ensure Dr. Phillips and non-innovation lead CRLT members are creating a sense of urgency for learning environment innovation, sharing the vision for investing towards early stage scale of personalized learning, and modeling contextual ambidexterity by leading in ways that are aligned to the maturity of different strategies.</td>
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<tr>
<td>• Build in at least bi-annual collective state team and broader College Ready opportunities for reflecting on intended shared impact, results, and revising hypotheses</td>
<td>• Ensure state teams have the capacity and expertise to balance investing in high leverage improvement strategies and more intensive early stage innovation investing. This may require adding or repurposing capacity on state teams.</td>
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<tr>
<td>• Share Edmondson’s (2012) research on teaming, assess the current balance of accountability and psychological safety, and pursue strategies to continue to strengthen learning culture (see page 34 for specific strategies)</td>
<td>• Reward teams for surfacing tensions between the improvement and innovation agendas and testing strategies for resolving them through their investments and leadership in targeted geographies.</td>
</tr>
<tr>
<td>• Test and refine the implementation network strategy in states as engines for collective learning in and with the field</td>
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Implications for Sector

Will the personalized learning movement succeed in transforming schools to be more responsive to students and our society? And can foundations play a meaningful role in the movements’ progress? My experience understanding this movement and the Gates Foundation’s role in the context of history has left me guardedly optimistic. I offer three key implications for those who would influence the personalized learning movement through philanthropy or other “outside-in” reform avenues.

Context: Common Core, a management paradigm shift, and technology

Leaders of this change can leverage three important elements of context in our society and education sector that previous movements did not have available to them:

- **Common Core**: common standards are a boon to innovation and diffusion in all industries. As innovators and early adopters build successful models for instructional innovation, there will be more transparency of results and more portability in their designs to encourage diffusion.

- **The management paradigm shift**: from business (Furr et al., 2014), to healthcare (Berwick, 2003; Edmondson, 2012), to non-profit management (Senge, 2010), scholars and practitioners are heralding a new paradigm of organizational design and management. They call for a move “beyond taylorism” and its top-down control, routinization, and emphasis on individual accountability (Berwick, 2003, p. i3). To manage the uncertainty and complexity of the information age, organizations must evolve into adaptive learning systems where control is dispersed; workers are organized to learn through rapid cycles of designing, experimenting, measuring, and
adapting; and accountability is shared across teams and systems (Edmondson, 2012). As this paradigm grows, funders and leaders of the personalized learning movement can connect the architecture of personalized learning schools to these ideas. They can also scrutinize their existing improvement strategies to ensure that they’re not unintentionally reifying outdated organizational structures in schools and systems they influence.

- **Technology and learning science advances:** the grammar of schooling innovators of the past did not have the technology or scientific insights into the nature of learning on which to organize their new patterns of learning. Technology operates in the current personalized learning movement as a tool for codification and testing of instructional practices and as a labor saver for teachers, enabling a feasible work flow for personalizing learning for 25 students that would be largely out of reach for the average educator without technology. As learning technologies improve, web connectivity increases in schools, and smart phones become ubiquitous, there will be fewer barriers to teachers adopting and experimenting with personalized learning in their individual classrooms, which could have broader influence inside their school or system.

**Theory of action: the virtues of disruption and diffusion**

The seeds of this modern movement to transform schools were sown by disruptive innovation theorists. Clayton Christensen and Michael Horn’s (2008) *Disrupting Class* and its theory that technology enabled instruction would eventually eclipse and replace the current public school system defined the early architecture of College Ready’s Next Gen strategy and
the work of many innovators in the field. However, as the movement has progressed, and in parallel with broader disillusionment with disruptive innovation theory (Fox, 2014; Lepore, 2014), the idea that a transformation of schools is afoot largely from outside of the public education institution has waned. Notably, Christensen, Horn, and Straker (Christensen, Horn, & Staker, 2013; Horn et al., 2014) have recently offered the concept of a “hybrid” disruptive innovation to explain the pattern of blended learning expanding through public schools.

I am encouraged that both College Ready and the broader personalized learning movement are evolving their theory of scale in this direction. Disruptive innovation has significant limitations in addressing the challenges of scale in public education due to a) the limits to growth for charter schools (Toch, 2009), b) the custodial demands of educating children from PK through at least middle school, and c) the social nature of learning that suggests students should and will continue to gather in-person for portions of their learning time. It is also an extremely threatening theory for most educators, engendering resistance rather than cooperation in identifying ways to better meet the needs of students and society.

Diffusion of innovation theory is particularly useful mental model for the spread and scale of innovation in the US K-12 system. With 50 states, 14,000 districts, 100,000 schools, and 3 million teachers, where 90 percent of education spending is state or local, a foundation seeking to encourage the adoption of an innovation at scale has few central leverage points. In our decentralized system, adopters at the district, school leader, and teacher level have significant latitude in how they practice their craft and even in the face of state or federal mandates, I contend it is the adoption choice of these individuals that most shapes children’s learning environments. The adoption of the Common Core is an illustrative example. While
philanthropists working with the federal government and advocacy organizations effectively leveraged Race to the Top to incentivize states’ adoption of this innovation in college ready standards, this action has not guaranteed implementation. When confronted with the resistance of key stakeholders, a number of states have rolled back their adoption of the standards and those who have stayed the course still face the challenge of ensuring that the many district leaders, principals, and teachers adopt the standards in ways that change instruction.

So if disruptive technology tools or personalized learning school networks are not the answer to transformation of learning environments at scale, then new patterns for organizing learning environments must be built for those leading and teaching in public schools to adopt. These models, or dominant designs, must balance delivering enough value (to students and teachers), with being implementable by mere mortals, with being flexible enough to fit into different contexts. We need not see these as the oppressive comprehensive school designs or managed curriculum of the past. Built with a new intention to provide a more adaptive system to enable teachers to respond to students needs and for students to direct their own learning, these designs would instead be a new way of using time, talent, and technology to enable more learning on the part of students and teachers. They would answer the burning questions that still plague innovators and early adopters in the personalized learning movement – how might students track their progress through a well-designed competency-based progression? how could we organize time and teacher talent to personalize learning for different age groups? – with proven routines that later adopters could adapt to their context with confidence that they are effective and manageable. Rather than see proven models as imposing a box on teachers
and school leaders, one can envision them as providing a platform from which they can better meet the needs of students and demands of society.

Today the personalized learning field is dominated by intermediary funders, loose networks, and school design providers incentivized by the RFP processes of foundations like BMGF to build custom designs for each school or system. Very few of these organizations have the incentives or capabilities to do the more difficult work of supporting implementation, developing knowledge for practice, codifying it in ways that would support other adopters, and employing it in implementation networks where it could be adapted and refined by new waves of adopters.⁹ This will need to change if personalized learning is going to meet the challenge of broader scale.

Rather than concentrate funding in schools, funders should focus on concentrating funding in “hubs” with the capabilities to build and refine templates for use by the next wave of adopters. These hubs could be current TA providers, universities, successful personalized learning charter networks, implementation networks or a combination of these actors working in concert. They will need capabilities in partnering with teachers and school leaders to customize designs, facilitating collaboration across their networks, capturing and codifying instructional routines, agile research and development, and the business savvy to determine a sustainable business model. I am encouraged by signs from funders in the personalized learning space that this is the direction they may be moving, including Silicon Valley Fund’s Brian Greenberg (2015) who described his vision for scale in a recent article:

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⁹ New Classrooms is one notable example, although it is unclear whether and how they will network their partner schools and whether they will evolve a more affordable and sustainable business model.
“Our hope is that the radical innovators continue to push the limits while early adopters continue to grow. Then, once we as a sector have a better playbook of how to do this work, as the quality of software tools improves, and as better support providers emerge it may be easier to tackle school change at scale. But we think it is a mistake to skip the steps of preparing for scale (learning and codifying how to do this work best, building the support mechanisms, etc.). Let’s not under estimate the change required of teachers learning new ways to do their jobs, students truly owning their own learning process, and parents signing-off on very different school models than what they experienced.”

**Strategy: Building a social movement will be crucial**

Transformations of democratic institutions like public schools are unlikely to succeed without a social movement of stakeholders making the argument. Innovators of the past have overlooked this reality, too often refining their models and arguments for one another without extending a broader tent for the educators, students, families, and community members who have a stake in our system. Leaders and funders in the personalized learning movement should consider investing in and contributing to social movement building at three levels:

- Organizing industry leaders to advocate not only for the rigorous standards, but habits of success, including self-directed learning, that are required for public school graduates to succeed in the economy.

- Organizing and amplifying the voices of students and families who are not being served by the current system. Advocates organizing against differential discipline outcomes may be a particularly prime group to raise awareness with about how personalized learning instructional innovations better respond to the needs of students, increase engagement, and decrease disciplinary action.

- Organizing teachers and principal early adopters of personalized learning to demand system transformation that enables them to be more responsive to students needs and prepare them for a changing world.
Throughout my residency, I was listening to David Christian’s (2008) Big History lectures during my commute. I was struck by his theme of the 13.7 billion year history of our universe as a story of increasing complexity, despite a universe that is governed by the second law of thermodynamics. Christian emphasizes two key implications of the second law of thermodynamics: a) if the natural state of the universe is entropy, or randomness, then increasing complexity requires work against this natural state and b) with increasing complexity comes fragility. In describing the astonishing complexity of human society today, he points to fossil fuels and collective learning as the enabler of the “work” that has built the hyper-complex innovation age we live in.

I began to see my work as a nested set of systems, built through the collective learning and effort of many, confronted with the fragility of increasing complexity and attempting to do as Machado encourages and see that we have “made this road” and could make another. At the macro scale, our society’s collective approach to organizing learning, built through the collective learning and effort of millions of educators over the last century, is challenged to adapt to a hyper-complex society. At the mezzo scale, the College Ready team, built through the collective learning and efforts of hundreds over the last 15 years, is challenged to adapt to the need for greater collaboration, learning and ambidexterity to support the education system’s transformation. And at the micro scale, I am a leader, built from all of my previous

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10 I got interested in Big History because Bill Gates has been instrumental in popularizing Christian’s Big History Project, which attempts to tell the history of time from the Big Bang through the modern era. He focuses on the 8 thresholds of increasing complexity over the last 13.7 billion years. Bill Gates provided private funding to Christian and other entities to launch an online course of Big History that is available to all and intended for use in high schools (Sorkin, 2014).
learning and efforts to lead, and challenged to adapt to have influence in an unfamiliar, shifting, and complex organization.

My conviction is that the stakes are too high for low income and minority children and our society, the improvement strategies that I and others have employed in the last 30 years too impotent, to not address these challenges and build the ecosystem and designs for a pattern of schooling fit for the information age. As I have described in this capstone, I think there is reason for optimism that each of these actors can prevail in reinventing themselves to respond more adaptively to the complexity they face. My optimism stems from a core belief about how adaptive learning happens that I have observed now across my own development, the development of children in my classroom and my family, and the development of organizations, social movements, and the education sector in my professional life: we all need challenge and support to transform. As Kegan and Lahey (2009, p. 320) have characterized this fundamental principle of learning, we need: “good problems, the sort that reveal the limits of our current way of making meaning; and support to bear the anxiety that goes with realizing we may not know ourselves or the world as well as we thought.” The information age will continue to present educators with “good problems.” Innovative teachers and school and system leaders are grappling with these problems and demonstrating promising adaptations to our accepted means of organizing learning. Philanthropists can and should contribute to the transformation of the sector by turning their capital to building the knowledge and enabling conditions that can provide the right level of support for those adaptations to take root with more and more educators.
Appendix A: Scale and Spread Framework
### Appendix B: BMGF Values-Driven Behaviors

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Description</th>
<th>Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Optimism</strong></td>
<td>Treats change and new situations as opportunities for learning and growth</td>
<td>Establishes challenging goals</td>
<td>Targets opportunities with the greatest potential</td>
</tr>
<tr>
<td><strong>Collaboration</strong></td>
<td>Establishes good relationships by helping people feel valued, appreciated and included</td>
<td>Works with a spirit of transparency and openness to build trust</td>
<td>Says what he or she believes is true, even if it’s unpopular</td>
</tr>
<tr>
<td><strong>Rigor</strong></td>
<td>Thinks critically and challenges own assumptions and conclusions</td>
<td>Considers both hard data and the perspectives of others to create a holistic view</td>
<td>Keeps current on key economic, social, and political trends throughout the world</td>
</tr>
<tr>
<td><strong>Innovation</strong></td>
<td>Draws upon diverse sources for inspiration</td>
<td>Creates freedom to experiment</td>
<td>Takes risks in the interest of finding a better way</td>
</tr>
</tbody>
</table>
Appendix C: Personalized Learning Outcomes & Working Definition

State Plan Personalized Learning Outcomes

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learner profiles</td>
<td>% of schools that have a learner profile for every student</td>
</tr>
<tr>
<td>Personalized learning paths</td>
<td>% of schools that have a personal learning plan for every student</td>
</tr>
<tr>
<td>Competency-based progression</td>
<td>% of schools that award credit based on competency</td>
</tr>
<tr>
<td>Flexible learning environments</td>
<td>% of schools that have multiple flexible learning environments</td>
</tr>
<tr>
<td>Digital content</td>
<td>% of schools studied that utilize digital content for &gt;=25% of each student’s instructional time</td>
</tr>
</tbody>
</table>

Quality Outcomes

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Support</td>
<td>% teachers and parents in favor of personalized learning</td>
</tr>
<tr>
<td>Financial Sustainability</td>
<td>% of schools studied that are over / under public revenue per pupil by year 4</td>
</tr>
</tbody>
</table>

Scale Outcomes

Working Definition of Personalized Learning

**Learner Profiles:** Teachers have an up-to-date record that provides a deep understanding of each student’s individual strengths, needs, motivations, progress, and goals to help inform his or her learning.

**Personal Learning Paths:** All students are held to high expectations, but each student follows a customized path that responds and adapts based on his or her learning progress, motivations, and goals.

**Competency-based Progression:** Each student’s progress toward clearly-defined goals is continually assessed. A student advances and earns course credit (if applicable) as soon as he or she demonstrates an adequate level of mastery.

**Flexible Learning Environments:** Student needs drive the design of the learning environment. All operational elements – staffing plans, space utilization, and time allocation – respond and adapt to support students in achieving their goals.
Appendix D: Pre-Launch Survey to Working Group Members

Working group expectations

At the end of this working group, what will success look like to you? (open ended response)

What are you most worried about? (open ended response)

Choose the answer that best represents your current attitude about the prospect of scaling and spreading personalized learning:

- Full speed ahead, we have no time to lose
- Maybe, it really depends on what and how we're thinking about scale
- Pump the brakes, we're not ready to invest in scale
- Other ________________________________ (w/ open ended response)

Norms: In order for us to achieve our aims, I'd like the group to commit to:

(two open ended responses)

Personalized learning

How do you define personalized learning? (If there's a definition online that you like, include the link) (open ended response)

What more do you want to learn about personalized learning to effectively contribute to this working group? (open-ended response)

Scale and spread

How familiar are you with the current scale and spread framework?

4 options: Not at all familiar - somewhat familiar- familiar - very familiar
Are there any theories, books, articles or people that inform your thinking about scaling innovations?

Team Culture

The following questions will gauge your perceptions of the culture of the CR team.

On the College Ready team, we all respect each other. (Strongly agree, Agree, Neutral, Disagree, Strongly disagree)

On the College Ready team, when something bugs me, I’m able to raise the issue with the people involved. (Strongly agree, Agree, Neutral, Disagree, Strongly disagree)

On the College Ready team, everyone takes responsibility for what we do. (Strongly agree, Agree, Neutral, Disagree, Strongly disagree)

On the College Ready team, people talk about mistakes and problems, not just successes. (Strongly agree, Agree, Neutral, Disagree, Strongly disagree)

On the College Ready team, I don’t have to wear a mask, I can be myself. (Strongly agree, Agree, Neutral, Disagree, Strongly disagree)

Scheduling & just checking

Is there anything else you want working group leaders to know to ensure we do great work together?
Appendix E: Working Group Frame

**WHY SCALE AND SPREAD PERSONALIZED LEARNING?**

In order to:

- reach our ambitious target of 1 in 20 students demonstrating accelerated progress* through personalized learning by 2019 (towards an 80% college readiness rates by 2025),

- and respond to early moving districts and states across the country we must think differently about how to invest in early stage implementation.

- What aspects of personalized learning models are ready to scale? What are the potential on ramps for teachers, schools, systems, and states?

- Where do we focus our personalized learning scale investments so that they impact the highest number of low-income and minority students and contribute to broader diffusion of the innovation in their geography and/or network?

- How do we identify when targeted geographies are ripe for investment in scale and spread of personalized learning?

- Which ecosystem elements are most critical to early stage scale of personalized learning? Are there elements that we need to add or think about differently?

- How will our efforts to scale and spread personalized learning intersect with our other core strategies?

* Evidenced by >1 year of progress annually toward college readiness.
Appendix F: Personalized Learning Play List

Recognizing that we’re all at different points in our familiarity with personalized learning, we have organized this pre-work play list. From this list you can identify your own outstanding questions about personalized learning and find access to several resources to help you explore. If you have additions for this play list that your colleagues will benefit from please let us know and we’ll add them.

- **What is the working definition of personalized learning?**
  - See page 6 of the *Rand study* for our working definition of personalized learning and four common components across personalized learning models.
  - INACOL’s *Mean What you Say* paper can also be helpful in understanding how the field is using related terms such as personalized, blended, and competency based learning.

- **Why personalize learning?**
  - One successful school leader’s reason: *Diane Tavenner/Bill Gates interview* at SXSW
  - The world has transformed from an industrial to a knowledge economy: *Future of learning video*
  - Coherent, nested hierarchies are facing extinction, networked learning is expanding: *Richard Elmore* (beware, very provocative)

- **What does it look like?**
  - **Leading Charter Innovators**
    - *Summit* (explore the videos and/or read the case study)
    - *Brooklyn Lab*
  - **Leading District Innovators**
    - *Lindsay Unified School District, CA*
    - *Mooresville, NC*
    - *Milpitas, CA*
    - *DCPS, Washington D.C.*, (Featuring Tanesha Dixon, City Bridge Fellow and TAC member)
    - *Horry County Schools, SC*
    - *Los Altos School District, CA*
  - **Leading Model Providers**
    - *New Classrooms*

- **How have these system’s made the journey from traditional to personalized? What are some of the pitfalls?**
  - *Milpitas ISD, CA*: well-managed change in a mid-sized school district
  - *Summit PS*: using lean startup methods to refine their model over time
  - *USC Hybrid High*: a cautionary tale about over dialing on tech and forgetting about talent
  - *Rocketship 100 student classroom experiment*: a cautionary tale about managing change

- **But does it get results?**
  - *Rand study*
  - *New Classrooms*
  - *CRPE’s Is Personalized Learning Meeting its Productivity Promise*
  - *SRI International Blended Learning study*

- **What do the critics say?**
  - *Back-and-forth debate* between Alex Hernandez and Ben Riley
  - *National Education Policy Center* report
Appendix G: Working Group Norms

- One team: Support the team to stay focused on our ambitious shared goals.
- One Voice: Open and honest inside the room, one voice outside the room.
- Make good use of the variety of expertise in the room.
- Balance responsiveness to the needs of our partners in the field and use of evidence to guide our design.
- Ask questions, don't assume.
### Appendix H: Working Group Work Plan

#### PERSONALIZED LEARNING SCALE & SPREAD: WORK PLAN

<table>
<thead>
<tr>
<th>4-6 weeks</th>
<th>8-10 weeks</th>
<th>6-8 weeks</th>
<th>Ongoing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec-Jan</td>
<td>Feb-Mar</td>
<td>Apr-May</td>
<td>Implement in other states as they demonstrate readiness</td>
</tr>
</tbody>
</table>

1. **Understand history of personalized learning investments and align around MLI indicators**
   - Agree to goals and norms for working group
   - Review history of personalized learning and BMGF investments
   - Level set on MLI indicators for personalized learning
   - Conduct landscape analysis in CO and CA
   - Identify potential "on-ramps" to PL for early adopters.

2. **Co-design application of scale and spread strategy to address personalized learning MLI outcomes and test in CO/CA context.**
   - Co-design recommendations for how to apply spread and scale framework to accelerate personalized learning
   - Understand CO personalized learning context, test and improve PL scale and spread strategy against CO and CA context
   - Identify necessary national partners
   - Workshop with working group sponsors
   - Refine proposed PL scale and spread strategy

3. **Design CO and CA specific investments**
   - Integrate PL into 3-5 year strategic plans with CO and CA teams
   - Create internal learning plan and recommendations for resource allocation to support implementation
   - Personalized learning strategy integrated into CO & CA state plans.

3a. **Design and implement internal learning plan**

3b. **Implement work plan in other states as they demonstrate readiness**

#### Activities
- Work group charter
- MLI indicators for personalized learning
- CO & CA landscape analysis
- Potential PL on-ramps by stakeholder
- Recommendations for how to apply scale and spread strategy to accelerate personalized learning
- Identify national TA partner, advocacy, and teacher network development necessary to support scale and spread in targeted geographies
- Internal learning and sustainability plan
Appendix I: Empathizing and Problem Framing Meeting Agenda

Work group members will:

- Teach out learnings from review of theories of scale and identify shared commitments to guide strategy design
- Strengthen our shared vision for the outcomes of scaling personalized learning by better understanding the MLI
- Empathize with key stakeholders in personalized learning adoption and identify potential on-ramps

<table>
<thead>
<tr>
<th>TIME</th>
<th>AGENDA ITEM</th>
<th>DETAILS</th>
<th>FACILITATOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30-8</td>
<td>Breakfast and get settled</td>
<td></td>
<td>All</td>
</tr>
<tr>
<td>8-9:15</td>
<td>Welcome &amp; teach out on theories of spread and scale</td>
<td>15 mins Welcome and warm up</td>
<td>Zoe</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 mins Discuss key takeaways in like groups, narrow to 3</td>
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<tr>
<td></td>
<td></td>
<td>20 mins Each group shares their 3 key ideas (5 min/group)</td>
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<tr>
<td></td>
<td></td>
<td>30 mins Discuss common themes and how they connect to scale and spread of personalized learning</td>
<td></td>
</tr>
<tr>
<td>9:15-10:15</td>
<td>Deepening our shared vision for impact</td>
<td>• Overview of CR Measure to Learn and Improve (MLI) project</td>
<td>XXXX</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Dig into outcomes &amp; indicators – how would you define our outcomes?</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• Discussion &amp; wrap up</td>
<td></td>
</tr>
<tr>
<td>10:15-10:30</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:30-12</td>
<td>Empathizing with our stakeholders: identifying on-ramps</td>
<td>5 mins Intro Build stakeholder profiles in small groups</td>
<td>Zoe</td>
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<tr>
<td></td>
<td></td>
<td>30 mins Gallery walk with rose, bud, thorn</td>
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<tr>
<td></td>
<td></td>
<td>15 mins Discussion of most promising on-ramps and connections back to S&amp;S framework</td>
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<tr>
<td>12-12:15</td>
<td>Next steps and +/-Δ</td>
<td></td>
<td>Zoe</td>
</tr>
</tbody>
</table>
Appendix J: Plan for Integrating Personalized Learning into State Plans

2015-2016: INTEGRATING PL INTO STATE PLANS (STRAWMAN)

<table>
<thead>
<tr>
<th>Summer Work Weeks</th>
<th>Sept-Oct</th>
<th>Nov-Jan</th>
<th>Ongoing</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR Team understands PL TDA, definition, and MLI outcomes.</td>
<td>Evaluate MLI outcomes and PL landscape analysis to determine each states readiness for investing in scale of PL: Tiers: ground softening, secondary priority, major priority.</td>
<td>Revise state plans to address PL outcomes</td>
<td>Monitor and adjust</td>
</tr>
</tbody>
</table>

CR/State Team Activities
- Pre-reading from PL playbook
- Workshop on PL theory of action, definition, and MLI outcomes with examples
- Workshop on working group recommendations on investing in scale of PL
- Workshop on process for revising state plans (including PL, etc)
- Evaluate MLI and landscape analysis data to determine state readiness level
- Address PL with state stakeholders in stock takes (if appropriate)
- Integrate PL into 3-5 year strategic plans
- Revise investment plan and bring to PPM

Working Group Deliverables to Support Activities
- Pre-reading and session plans
- Example revised CA (and GO?) state plan
- Revised gap analysis template incl. PL and criteria for technical readiness
- Guidance on applying S&S to PL outcomes
- PL diligence: questions and facts base collected
- Identify national TA partner, advocacy, and teacher network development necessary to support state plans
- CR capacity recommendations for supporting PL in states (who will help state teams do this work?)

Risks:
- Capacity to support state teams
- State plan process diverges from ideal process significantly
Appendix K: Strategy Design Retreat Agenda

February 9-11

Working group members will:

- Connect with Tom on his vision for personalized learning
- Understand CO/CA personalized learning landscape
- Design and test strategies for accelerating scale and spread
- Generate improvements to landscape analysis process and deliverable
- Tune working group deliverables and division of labor

Monday, February 9 (Lake Washington)

<table>
<thead>
<tr>
<th>TIME</th>
<th>AGENDA ITEM</th>
<th>DETAILS</th>
<th>FACILITATOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30-8:30</td>
<td>Breakfast and get settled</td>
<td></td>
<td>All</td>
</tr>
<tr>
<td>8:30-9:30</td>
<td>Welcome, goals &amp; warm-up</td>
<td>15 min Overview retreat goals &amp; warm-up</td>
<td>Zoe and XXX</td>
</tr>
<tr>
<td></td>
<td></td>
<td>45 min Conversation with Tom about personalized learning</td>
<td></td>
</tr>
<tr>
<td>9:30-10:30</td>
<td>PL landscape analysis for CO and CA</td>
<td>30 min CA Context</td>
<td>XXX</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30 min CO Context</td>
<td></td>
</tr>
<tr>
<td>10:45-12:15</td>
<td>CO and CA consultancy</td>
<td>Break up into CO/CA teams and problem solve around core dilemma to define potential investment strategy</td>
<td>Zoe</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 mins Present core scaling dilemma (Cat and Nina)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>5 mins Clarifying questions about dilemma</td>
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<td></td>
<td></td>
<td>40 mins Discuss definition of success in 3-5 years and strategy to tackle dilemma</td>
<td></td>
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<tr>
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<td></td>
<td>30 mins $100 activity against scale and spread framework in this state (5 mins individual think time/5 mins to post/20mins to discuss trends)</td>
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<tr>
<td></td>
<td></td>
<td>10 mins Debrief discussion and prepare to share out</td>
<td></td>
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<tr>
<td>12:15-1:00</td>
<td>Lunch</td>
<td>Each team presents out their dilemma, definition of success and investment strategy (10 mins present, 5 mins clarifying questions)</td>
<td>Team</td>
</tr>
<tr>
<td>1:00-1:30</td>
<td>CA/CO groups present out</td>
<td>Each team presents out their dilemma, definition of success and investment strategy (10 mins present, 5 mins clarifying questions)</td>
<td>Team</td>
</tr>
<tr>
<td>1:30-2:30</td>
<td>Discuss implications for strategy recommendations</td>
<td>Whole Group discussion:  - What were the similarities and differences of approach to investment across the two contexts?  - How might we improve or expand archetypes (if needed)?  - Define high level guidance for investment in grass roots and grass tops archetype</td>
<td>Team</td>
</tr>
<tr>
<td>2:30-2:45</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2:45-3:15</td>
<td>Wish list for next iteration of landscape</td>
<td>- What do you wish you had known?  - How could we gather that info?</td>
<td>XXX</td>
</tr>
<tr>
<td>TIME</td>
<td>AGENDA ITEM</td>
<td>DETAILS</td>
<td>FACILITATOR</td>
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<td>------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>8:30-9</td>
<td>Breakfast and get settled</td>
<td></td>
<td>All</td>
</tr>
<tr>
<td>9:00-11:30</td>
<td>Discussion of outcomes, narrative,</td>
<td>Group discussion</td>
<td>Zoe</td>
</tr>
<tr>
<td></td>
<td>and strategy recommendations</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td><strong>11:30-12:15 Lunch</strong></td>
<td></td>
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<tr>
<td>12:15-1:15</td>
<td>Whole group discussion about scale of PL with Andy Calkins (NGLC)</td>
<td></td>
<td>Andy Calkins</td>
</tr>
</tbody>
</table>
| 1:15-2:30    | Deep drive by System Elements      | 60 min Group by system element and craft recommendations for further development  
|              |                                    | Lake Washington:  
|              |                                    |   ○ Advocacy: Raul, Zoe  
|              |                                    |   ○ Teacher Engagement: Julie, Sarah  
|              |                                    |   ○ Imp. Networks: Noah, Helayne  
|              |                                    | Elliot Bay:  
|              |                                    |   ○ TA Providers: Eileen, Henry, Corina  
|              |                                    |   ○ Fast Adopters: Adam, Natalie  
|              |                                    | 60 min Each group presents and asked probing questions, provided feedback (10 min/group)  
|              |                                    | 15 min What did we notice across system elements?                      | Zoe         |
| 2:30-3:30    | Return to strategy guidance by archetype | How could we improve our guidance based on what we’ve learned from Andy/design challenge? | Zoe         |
|              |                                    | **3:30-3:40 Break**                                                    |             |
| 3:40-4:30    | Close out for day                  | Capture parking lot issues and review logistics for Wednesday           | Zoe         |
Appendix L: Mid Project Working Group Survey Results

Below are the four goals that our working group is charged with. To what extent do you agree that our group is on track to delivering on these goals?

A. Define an approach to investment in targeted geographies and key national partnerships to build towards personalized learning outcomes and 5% of students experiencing accelerated achievement in personalized learning environments.

B. Approach applied by CA state team.

C. Diagnostic fact base begun for all other direct investment geographies.

D. Agreed upon foundation resource deployment to support implementation.

WHAT WE HEARD FROM YOU
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