Promises and Problems:
Promoting Deeper Learning in a High-Performing Education System

by

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DEDICATION

To the students and families with whom I am privileged to work

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Several months before completing this dissertation, I remarked to a close family friend, "I get it. I now get why people don't finish dissertations. This is a truly Sisyphean task." (He calmly responded, "You will roll the boulder to the top.") Although I never doubted that I would, eventually, roll the boulder to the top, and that it would all feel worthwhile once I got there, I could not possibly have achieved this feat without a great deal of help. I am deeply grateful to those who have supported my climb.

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ABSTRACT

Today's American public schools are expected to promote deeper learning and cultivate 21st-century skills in order to achieve equity and excellence for all students. Yet these goals, and the intellectually ambitious instruction they demand, fall far from the status quo of the schools most students attend, particularly in high-poverty school systems where the need for deep, systemic innovation and improvement is often greatest – and the challenges are proportionate to that need. Such work is novel, complex, uncertain, and hard. There are few exemplars in the field, and little empirical research that examines the efforts of schools and systems actively striving for these goals. Despite continual calls for deeper learning, for dramatic improvement in our most struggling school systems, and for equity and excellence in our U.S. school system writ large, we lack the knowledge for how to construct new school models that might achieve these aims.

This study tackles this knowledge gap by generating theoretical and practical knowledge about redesigning low-income school systems for deeper learning that advances equity and excellence. I use a mixed-methods, embedded single-case study design to examine the efforts of one charter management organization in constructing, developing, and animating a novel school model to yield deeper learning for all students, and to better grasp the factors that complicate these innovation efforts. My findings indicate three critical factors that complicate attempts at novelty: inherited conditions, such as the inherited understandings of school culture and instruction that individuals and the organization itself bring with them to this work; a learning

imperative derived from the uncertainty and complexity of doing novel, innovative work; and the challenges of relying on inherited modes of organizational learning that are ill-suited to meet the learning imperative at hand. The data further suggest that, despite strong dynamics at play that might push a school system toward a dramatic, "greenfield" approach to school improvement, it may be useful to recalibrate (though not lower) expectations for such work and seek alternative ways to manage its inherently complicating features.

This dissertation sheds much needed light on the scope and particulars of the challenges that accompany educational innovation, while also offering insight into ways that schools and systems might successfully manage such challenges, and illustrating the promise and importance of these efforts.

CHAPTER I

Introduction

Today's American public schools are charged with the ambitious goal of preparing all students for 21st-century success. School leaders are asked to manage the core technology of learning and teaching and to ensure the conditions conducive to such achievement, while teachers are asked to teach in sophisticated ways that enable deeper learning from their students. In this manner, educators are expected to pursue twin goals of educational excellence and equity. This work is complex and difficult. Moreover, it is likely beyond the status quo of the public school systems most students attend.

The U.S. public school system was not designed to promote intellectually ambitious teaching and learning, or excellence and equity – at least not at scale. These goals represent a dramatic shift for public schools. Instead, the U.S. school system was developed to provide a basic level of education to large swaths of people as efficiently as possible (Callahan, 1964; Tyack, 1974). The schools or systems that have engaged in the complex work of ambitious instruction are few, often serving the elite or those deemed especially talented (Cohen & Moffitt, 2009; Cohen, 2011). Therefore it is unsurprising that there is little know-how about best practices to engage in such work, and that examples of success remain isolated.

Challenges abound in pressing schools to transition from a goal of universal access to basic levels of education, to one of universal attainment of excellence and equity via intellectually ambitious instruction. One challenge is an established tradition of instruction

hearkening back to an "ancient instructional inheritance" (Cohen 1988, p. 39), which is generally teacher-centered and frequently dry, didactic, and low in rigor. This tradition, deeply ingrained in American schools across generations of teachers and students, is not easy to shed or disrupt. Another challenge is the dearth of coherent educational infrastructure[1] in our school system. When done well, the presence of such infrastructure is often seen as enabling schools to produce instructional coherence and strong educational outcomes (Cohen 2011; Cohen & Bhatt, 2012; Cohen & Moffitt, 2009; Cohen, Peurach, Glazer, Gates, & Goldin, 2014), and regarded as a prerequisite for enacting comprehensive reforms to further student achievement (Cohen, 2011; Mehta & Fine, 2015). A third challenge, alluded to above, is the absence of know-how for this work. There is no highly developed, practical knowledge base on which teachers and leaders can lean to build and animate comprehensive, whole school models that would support deeper learning for all students. Likewise, formal, professional preparation that addresses this sort of change is scarce. Finally, a fourth challenge is the scope of organizational learning and organizational change critical to schools' success in making this significant shift. Such organizational endeavors are inherently uncertain and complex, and necessitate organizational capacity and capabilities that many schools and systems simply lack.

The challenges of raising the academic bar are exacerbated in high-poverty school systems and those predominantly attended by students of color because of systemic issues underlying these institutions. In recent years, a growing number of schools have struggled to produce significant gains in student achievement (Center on Education Policy, 2012), and these schools serve a disproportionate percentage of low-income students and students of color (Calkins, Guenther, Belfiore, & Lash, 2007; Kutash, Nico, Gorin, Rahmatullah, & Tallant,

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[1] As defined here, educational infrastructure indicates a coherent set of aligned educational components such as curriculum and assessment, school culture and school routines, and professional development of staff; it also includes the development of tools that support the use of such infrastructure (Peurach & Neumerski, 2015).

2010). These schools and school systems, because they are built upon a historically inequitable foundation (itself the product of deeply problematic systems and policies), fail to achieve even the modest levels of education already promised by our public education system, let alone higher benchmarks.

The reasons for these struggles are many and well documented, resting almost entirely in profound disparities rooted in and sustained by long-held institutional practices, structural barriers, and outright racist policies (Boykin & Noguera, 2011; Kendi, 2019; Lewis, O'Connor, & Mueller, 2009; Love, 2019). Kendi (2019) writes, "Every policy in every institution in every community in every nation is producing or sustaining either racial inequity or equity between racial groups" (p. 18). Indeed, the policies that have endured in American institutions of public education have continually produced and sustained gross inequities, exacerbating gaps in educational opportunity by race and class. They have created a system of public schooling in which different groups of children are not educated in anything close to resembling a level playing field; in fact, they are "not even playing in the same game" (Love, 2019, p. 21). And, because these inequities are so deeply ingrained in our system of public schooling, it is often overlooked that broader social structures and systemic barriers – themselves deeply embedded – underpin and directly cause these inequities in the first place (Ladson-Billings, 2017).

The specific disparities resulting from these systemic barriers and structures, which are especially pronounced between the increasingly segregated schools (Orfield, Ee, Frankenberg, & Siegel-Hawley, 2016) that low-income students and student of color attend, and those of their more affluent and White peers, are well established (e.g., Darling-Hammond, 2007; Diamond, 2007, Kozol, 1991). For instance, as much as public schools writ large tend to employ low-rigor, didactic teaching and passive learning, there is a particular persistence of this form of instruction

in many low-income schools and schools serving students of color that routinely deprives their students of the educational experiences necessary for success in college and beyond (Abu El-Haj, 2015; Diamond, 2007; Waxman, Padron, & Lee, 2010). Moreover, struggling schools and systems tend to be the least well equipped to make substantial gains in student achievement (Kutash et al., 2010), frequently lacking the educational infrastructure that enables instructional improvement, to say nothing of enabling the complex changes required to systematically embrace high-quality, intellectually ambitious instruction (Cohen, 2011; Mehta & Fine, 2015). A thick knot of additional disparities, ranging from inequitable funding to teacher quality, compound those previously mentioned. Thus, change is often most difficult in the school systems where it is most needed.

Yet despite the well-recognized need for school improvement and innovation, there is little scholarly attention given to particular confluences of factors – such as those indicated above – that make this work especially difficult, and that further complicate the work in high-poverty school systems. Few studies explore novel, comprehensive school models[2] intended to yield deeper learning, and even fewer studies consider the processes of constructing, developing, and animating such models, and of converting existing, "status quo" school systems to these novel models. Furthermore, there is minimal research that looks at the high-performing (as measured by conventional benchmarks such as attainment on standardized tests) education systems in low-income communities that now strive for considerably more ambitious results: the deeper learning required for 21st-century success. Given this dearth of scholarship, we have only developing knowledge of solutions to the challenges of achieving lofty academic goals in high-poverty

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[2] Here, the term "school model" refers to the entire package of the school, ranging from its educational infrastructure to formal organizational components such as staffing structures and schedules, as well as facilities and physical layout, and including the nitty-gritty of which these elements are comprised.

school systems, and of school innovations that might support these solutions and address these challenges.

Society is calling for equity and excellence in public education, though absent knowledge for how to achieve these aims. This study begins to tackle that gap by generating theoretical and practical knowledge about redesigning low-income schools and school systems for deeper learning that promotes equity and excellence. Redesign of this sort requires a dramatic shift in instructional practice, as well as the development and coordination of educational infrastructure and know-how in innovative ways. Only by giving a deep, laser-like focus to the "how" of such work can we understand the scope and specifics of its challenges, and thereby begin to devise responsive solutions. This dissertation does just that, and thereby seeks to support school innovation and improvement efforts in schools – especially high-poverty schools – that strive for outstanding, equitable outcomes for all students via intellectually ambitious teaching and learning.

Research Questions and Study Design

Relying on ethnographic approaches to research, I use a mixed-methods, embedded single-case study design (Yin, 2003) to examine the efforts of a charter management organization (CMO) in pursuing the goals described above. This case study probes and unpacks the focus CMO's approach to building and launching a novel, whole school model designed to (as described by the organization) deepen student learning, increase engagement, and strengthen achievement; additionally, the study strives to better understand the challenges and complications that this school system encountered along its innovation journey. My research is guided by the following questions, with the fourth question complementing and crosscutting the initial three:

1. What approaches do education leaders use to construct such models?

2. What are the central components of these models?

3. How do leaders and teachers animate these models in practice?

4. What complicates these efforts?

Case and Context

Over the course of my research, the focus school system of this case study, Achievement First (AF), was deeply absorbed in the work of designing and organizing for, as well as enacting, a novel and comprehensive school model. Achievement First was a CMO that, at the time of this writing, operated 37 schools serving approximately 14,000 students in five cities across Connecticut, New York, and Rhode Island. The organization had a strong record of student achievement across its schools (as measured by standardized tests and college acceptance rates), all of which were located in low-income, urban communities predominantly serving Black and Latino students.

Although AF was well known and well regarded for the success it had achieved at scale with its traditional school model (referred to as AF Classic), the CMO began the process of constructing an innovative school model in 2014. The new model, called Greenfield, was a response to multiple factors, both internal and external, but primarily motivated by urgent concern over: a) a precipitous drop in student achievement on the new Common Core State Standards-aligned state assessments, and b) AF alumni's persistently lagging college graduation rates (Sawch, 2016). In light of these concerns and the urgency surrounding them, AF actors asked themselves, "If you could build any school, what would you build?" (Achievement First, n.d.). Actors aimed to picture an open field on which they could design the school of their choice, and the Greenfield Project was born.

After early prototypes and select, full-grade pilots of the Greenfield model, AF launched the model across all grades, K-6, in one of its existing AF Classic schools. Although the CMO later started several new Greenfield schools, opened from scratch with one grade apiece, it is on the initial conversion school that this study focuses. My objective in this dissertation was not only to better understand the processes, lived experiences, and complicating factors of constructing, developing, and animating a novel school model geared toward deeper learning, but also to understand those features of the work *in the context* of an existing school and school system. This context, regardless of the specific type of system (charter or district, urban or suburban or rural, etc.) most closely resembles the reality for innovation across our country's public schools. Therefore, the choice to focus on a conversion school, innovating on its current model, was a deliberate one.

This study also focuses, however, on action at the system level. Thus, there are dual units of analysis: the conversion Greenfield school nested within the larger AF network. My data draws closely on the work and experiences of novelty and change at both the organizational level and at the school level. These two levels were inextricably linked, and therefore warranted equal attention not only as discrete entities, but also in terms of their relationship with one another.

Methodology

Data collection was comprehensive, and included three types of data gathered over approximately 13 months. I conducted regular, ongoing observations – participant observation and direct observation – of school and network meetings and activities, as well as of classroom instruction and school events. In addition, I engaged in informal conversations with a range of Greenfield players, and conducted formal, semi-structured interviews with a subset of those players, specifically teachers as well as network- and school-level leaders. To triangulate my

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observations and interviews, I methodically gathered and reviewed a variety of relevant

documents and artifacts. Concurrent with these three categories of data collection, I also

engaged in part-time curriculum design work for AF, which began nearly a year-and-a-half prior

to formal data collection, continued throughout the study, and ended a year after data collection

was complete.

The duration of this study, the scope and diversity of data, and the partial "insider" status

afforded by my part-time design work, combined to provide an immersive experience yielding

rich, holistic understandings and representing multiple perspectives. In Chapter III, I describe in

detail this study's methodology, including case selection and sampling, data collection and

analysis, as well as issues of validity and limitations.

Preview of the Findings

My findings shed light on multiple aspects of the work of school innovation and

improvement for deeper learning in high-poverty schools. They expose the particulars – the

"what" and the "how" – of one school system's approach to initiating and constructing this sort

of novel, whole school model, to developing and refining the design, and to animating the model

in practice. Through analysis of these findings, specifically with the lens of the crosscutting

question, *What complicates these efforts?*, I tease out distinct themes that appear across the

phases of AF's Greenfield Project. These themes, in turn, generate an analytic framework that

surfaces across my findings chapters (Chapters IV, V, and VI), which I then further unpack in a

subsequent chapter (Chapter VII) to get at the "why" behind this approach and its ensuing

complications. I present a brief summary of the findings and analytic framework here.

Findings

Achievement First sought to innovate on its AF Classic model in a rational, linear manner, but the processes that transpired proved to be far more ambiguous, complex, nonlinear, and generally messier than anticipated. To construct the Greenfield model, for example, AF took a three-pronged approach. The CMO generated fresh ideas using "greenfield" design thinking, leveraged early model implementation (e.g., prototypes, pilots, and early whole-school animation of the model), and relied – often unknowingly – on elements of AF's "playbook" for running high-performing schools. This approach conflicted with AF's blank slate aspirations for the novel model, because it consisted of fresh thinking about "doing school" that naturally and unavoidably combined and conflicted with existing thinking, beliefs, and practices.

Similarly, when AF moved to develop and refine its Greenfield design, it was confronted by the same tension. Despite resources, human capital, and capacity to flesh out the Greenfield model unfettered by the work occurring elsewhere in the network and in the AF Classic schools, that work – and the understandings on which it was premised – crept into the design's development. The novel components of the Greenfield model, such as project-based and interdisciplinary learning in thrice-annual expeditions, considerable time devoted to self-directed learning, and increased investment in enrichment and social-emotional learning, often lost some of their novelty as they incorporated aspects of the more-traditional AF Classic model. In addition, these novel elements were layered atop many of the existing AF Classic features, thereby creating a unique hybrid of the two models.

This pattern repeated itself, yet became further complicated, as school leaders and teachers moved to animate the Greenfield design in practice. These school-level players made a good-faith effort to understand the different dimensions of the Greenfield model (now already something of a hybrid design) and the rationale behind them, and to implement the new design

with fidelity. But when they struggled, or when elements of the model or of the new curriculum did not play out as intended, these frontline actors tinkered with the model's components and sub-components and tried to make them work. In tinkering – and especially when the tinkering felt unsuccessful – teachers and leaders, like their colleagues responsible for constructing and developing the model, tended to gravitate toward their ingrained, previous understandings of "doing school." The result was a school model that was neither wholly innovative nor entirely traditional, but rather a hybrid of the two.

Analytic Framework

The patterns that emerge across my findings were, I argue, largely due to three complicating factors that comprise my analytic framework. The first factor was inherited individual and organizational understandings of curriculum and instruction, of school culture, of coaching and professional development, and of school operations. These understandings of "doing school" filtered the thinking of Greenfield players and stakeholders as they constructed, developed, and animated the model. The second factor was a learning imperative generated by the qualities of innovation mentioned above: its uncertainty, novelty, and complexity. These features, endemic to such work, required active management and learning, especially against the backdrop of urgency to "get this right," not only to improve student and alumni outcomes and solidify AF's legitimacy, but also because AF cared deeply about its promise of success to students and families. The third factor, which I characterize as inherited modes of learning, refers to AF's struggles to meet the learning imperative at hand because its customary approach to organizational learning was a poor fit for the type of learning this particular innovation context demanded. These three complicating factors – inherited conditions, a learning imperative, and

inherited modes of learning – were bold themes across the data, and hugely impactful in the

trajectory of AF's Greenfield Project.

Overview of the Dissertation

I have organized the subsequent chapters to contextualize the work of educational

innovation for deeper learning in low-income school systems; to closely examine the work and

that which complicates it; and to better understand the "why" behind this approach and the

implications thereof. In the following chapter, I flesh out the conceptual framework that

underlies this study, unpacking the relevant literature. In Chapter III, I describe the research

design and methods that I employed to pursue the objectives of this dissertation. In Chapters IV,

V, and VI, I elaborate on the findings of this analysis. Across these findings chapters, I first

present the data that addresses each of my initial three research questions, working sequentially

with one question addressed in each chapter, then apply my analytic framework to analyze those

findings and address the fourth, crosscutting research question. In Chapter VII, I dig further into

AF's Greenfield Project, beginning with a Greenfield epilogue, then seguing into an analytic

reprise, followed by consideration of the rationale behind AF's approach with Greenfield and

recognition of potential alternatives. In the final chapter, I step back to reflect on the broader

implications and contributions of these findings, as well as propose possible directions for future

research.

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CHAPTER II

Literature Review

In this chapter, I define and unpack the components of the conceptual framework underpinning this study. I first explore the (relatively) new push for intellectually ambitious instruction for all students and analyze how this represents a significant shift from the initial and long-held goals of American public schools. Next, I pinpoint and discuss three major obstacles for making this shift, particularly in low-income school systems: the deeply rooted tradition of instruction in these schools; the absence of coherent educational infrastructure which, in turn, weakens attempts to reform such instruction; and the dearth of know-how to enact this instructional shift. I conclude by examining an additional obstacle: the challenges associated with tackling organizational learning in the context of schools and school systems. Specifically, I flesh out the challenges posed by the power of organizational imprint and inheritance, and by the requisite development of capabilities and structures to enable organizational learning and change.

Newly Ambitious Expectations for Public Schools

In a 2016 speech, former U.S. Secretary of Education John B. King, Jr. said, "Every child in this country needs and deserves access to the subjects that go into being a well-rounded, well-educated person" (n.p.). In the speech, King went on to define a well-rounded education not simply as a curriculum that features an array of academic and non-academic subjects. Rather, he

described it as one that provides a range of rich academic opportunities as well as opportunities to develop social-emotional and critical thinking skills; an education that gives a strong foundation in core subjects while also igniting passions and fostering cross-curricular connections. For King, a well-rounded education is not a luxury; it is a necessity for success in today's world.

The Imprint of American Schools

American public schools did not begin with this vision. Public schooling was established for mass education, and designed to educate the masses as efficiently and systematically as possible (Tyack, 1974). Conventional school systems, geographical and hierarchical by nature, were formed to facilitate this efficiently (Peurach, Yurkofsky, & Sutherland, 2019). In the early years of mass public education, most American schools emphasized a teacher-centered pedagogy, rote learning of basic content and skills, quiet and disciplined pupils, and assimilation to common American values in order to produce good citizens (Cohen, 1988; Kaestle, 1983; Lortie, 1975). This imprint has persisted over time; vestiges – in fact most, if not all, of these components – are found in many schools today (Mehta, 2013a). The "factory model" of schooling, along with its associated practices and aims, continues to dominate.

This model of schooling has, in some ways, accomplished its goal. American public schools have succeeded in providing a basic level of education to a large, diverse group of people (Cohen & Mehta, 2017). To be clear, that basic level of education is a low bar, and one that, even if it has afforded educational access to an increasingly broad and diverse group of students, has always been, and remains, a system "built on White supremacy, anti-Blackness, and sexism" (Love, 2019, p. 26). To that end, certain groups of students – primarily White, wealthy or middle-class, and with few learning differences – have benefited from this system far more

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than others, and the schools and systems that serve these students have more effectively delivered the promised results than others. Such inequality is itself rooted in the origins of American schools; even when early school systems were developed to "promote equality of opportunity… the fair chance was open mainly to white, native males" (Kaestle, 1983, pp. 91-91). Yet American public schooling has evolved to provide universal access to all students in grades K-12 (Katznelson & Weir, 1985) and, while that may be a low bar and one that remains deeply flawed, one could argue that, in its most rudimentary form, the goal of the U.S. public education system has been achieved.

New Goals

Now, however, this goal has begun to change. No longer is it sufficient for students to receive a narrow education comprised of basic skills and knowledge. No longer will didactic teaching and rote learning produce adequate academic achievement, to say nothing of the social-emotional skills and sophisticated thinking required for 21st-century success. No longer does a high school diploma guarantee the type of career success and stability that it once did (Darling-Hammond, 2007). And certainly, no longer is universal access to public schooling an acceptable goal; "*excellence and equity* in public education – not as parallel pursuits and in tension but as coordinated with each other and, together, with classroom instruction" (Peurach, Cohen, Yurkofsky, & Spillane, 2019, p. 42, emphasis in original; Blankstein & Noguera, 2016) – has become the proper ambition of our educational system. Times are changing.

Today, there is a new push in schools and school systems for more ambitious instruction that yields deeper learning. I define *deeper learning* here as: "The combination of (1) a deeper understanding of core academic content, (2) the ability to apply that understanding to novel problems and situations, and (3) the development of a range of competencies, including people

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skills and self control" (American Institutes for Research, 2016, p. 2). Such learning inherently

relies on and encompasses the elements of a well-rounded education that Secretary King

describes. It paves the way for success in college and career that matches 21st-century standards.

It is the new goal for which many American schools are striving.

Deeper learning is not the result of a fixed, one-size-fits-all school model, a particular

pedagogy, or a specific curriculum. Rather, there are many ways to achieve such learning for

students. Project-based learning, self-directed digital learning platforms, cooperative group

learning, fieldwork and expeditionary learning, and service learning are just some examples of

approaches – or components of approaches – to instruction that can yield deeper learning.

Although there is no one instructional method prescribed for deeper learning, there are,

however, common principles that tend to produce it. For example, project-based work that

requires the application of content knowledge in authentic contexts enables students to grapple

with real-world problems in real-world ways. Interdisciplinary teaching encourages students to

see various subjects and skills not as discrete pieces to acquire as ends unto themselves, but as

interconnected parts of a greater whole – as they are often found and used beyond a K-12

education. Collaborative problem-solving teaches students the value of teamwork and creates

opportunities for all that genuine teamwork entails: good listening skills, effective

communication, the ability to discern when to lead and when to follow, and time- and task-

management as a collective. Intellectually rich instruction poses complex problems for students

to grapple with and provides occasions for student-led discourse that pushes individual thinking

and group understanding. Traditional American schooling, however, is not structured to teach

this full repertoire of sophisticated hard and soft skills; these skills necessitate a rigorous,

engaging, largely student-centered approach.

The importance of deeper learning for all. In recent years, a slow wave of understanding about deeper learning has begun to wash over the field of education. Many scholars, practitioners, and policymakers are now articulating the importance of deeper learning for all students, not just the most affluent or academically able (Mehta & Fine, 2015b). This push for deeper learning at scale – as the goal of public education writ large – is a new phenomenon, but the core elements of this work are not. The seeds of deeper learning have been cultivated in certain types of schools (usually those considered progressive and the province of the elite) for decades, hearkening back to John Dewey's early 20th-century vision for schooling (Cohen, 1988; Cohen & Moffitt, 2009).

Yet two key reasons have surfaced to motivate this educational push writ large. First, the mismatch between the outcomes of traditional American schooling and the skills now needed for students to "successfully navigate a rapidly changing world, participate in a complex and increasingly diverse democracy, or engage fully in the ever-evolving 21st-century workplace" (American Institutes for Research, 2016, p. 1) have become apparent. Second, despite decades of reform initiatives, the U.S. school system as a whole continues to fall short – due in no small part to persistent, structural "barriers of racism, discrimination, concentrated poverty, and access to college" (Love, 2019, p. 12) – in its efforts to successfully educate historically underserved populations (Noguera, Darling-Hammond, & Friedlander, 2015), and thus the push for equity and excellence for all has proved elusive. This combination of reasons is, in many ways, the catalyst for great change in American schools and systems.

Change begets change. In order to meet a different purpose of schooling, schooling itself must look different. For instance, Carnegie units are a poor fit for interdisciplinary, project-based instruction that challenges students to wrestle with authentic problems over a

significant period of time, and requires teachers to collaborate across grades and departments. Age-graded classrooms have often proven too rigid for the flexible nature of children's cognitive and social-emotional development. Dry, teacher-centered instruction and worksheets do little to encourage creative and critical thinking, ignite curiosity and spark debate, or promote collaboration. Assessments of the high-stakes variety tend to dampen students', teachers', and leaders' desire to take risks and encounter failure, both of which inevitably accompany complex instruction and deeper learning. The schools we have are, for the most part, not set up to achieve the goals we want.

Thus, although a range of research has shed light on the importance of deeper learning and its essential components, this scholarship far outpaces the education a typical public school provides or is capable of providing. Martinez and McGrath (2014) acknowledge the disparity between increasing support for the ideals behind deeper learning and the rarity of such ideals in practice. "The ambitions behind Deeper Learning… are broadly popular. Nonetheless, the schools that have truly managed to exemplify them still represent a tiny minority of the American education system" (p. 4). We must make significant shifts to how we "do school" if we are to close this gap.

Obstacles to Ambitious Instruction

There are numerous obstacles to making the necessary shifts that would enable the type of intellectually ambitious instruction and deeper learning described above. And, as is often the case, these obstacles become greater in low-income school environments, for reasons I detail below. Chief among these impediments are an ingrained tradition of instruction, largely grounded in deficit narratives; an absence of the educational infrastructure that enables instructional coherence (for any type of instruction); little know-how for how to enact such

instructional shifts, and few resources to increase that level of know-how. I examine these

obstacles, and the interactions between them, in the following sections, paying particular

attention to how these obstacles manifest in high-poverty school systems.

Tradition of Instruction in Low-Income Schools

"It would be of great concern to me and most of the people I know," said Lucy Calkins in

a 2003 *New York Times* article, "if we had an educational apartheid system with one method of

instruction for poor kids and another for middle-class kids" (Goodnough, 2003, n.p.). In many

states and school districts, however, this is the unofficial system America has. Although the

tradition of pedagogy in American schools as a whole draws upon an "ancient instructional

inheritance" in which "teachers are active" and "[l]earners are relatively passive" (Cohen, 1988,

p. 39), there are race- and class-based differentials within that legacy. As teacher-centered and

intellectually undemanding as the average public school systems may be, systems serving low-

income students of color tend to be even more so (Darling-Hammond, 2007; Diamond; 2007;

Kozol, 2005).

The hallmarks of instruction in low-income schools. Historically there have been

several hallmarks of instruction in low-income school systems and systems predominantly

serving children of color. Across grades, there is typically an emphasis on rote learning that

emphasizes recall and memorization rather than critical thinking skills and conceptual

understanding (Darling-Hammond, 2007). Teachers often are seen (and perhaps see themselves)

as the experts responsible for imparting knowledge to their students, the novices, who then

receive this knowledge passively. In other words, teachers are the possessors of knowledge

whose instructional relationship with students involves "'putting knowledge into' – like

'banking'" rather than "'pulling knowledge out' – like 'mining'" (Ladson-Billings, 2009, p. 38;

Freire, 1970). Additionally, the curriculum usually is less "enriched": opportunities for complex and engaging interdisciplinary projects are lacking; the arts programs and athletic offerings common in middle-class school systems are weak or absent; and social studies and science get short shrift in exchange for the more heavily tested "core" subjects of reading, writing, and math (Kozol, 2005; Ladson-Billings, 1999). Moreover, in high school, access to Advanced Placement and college preparatory courses is limited, while vocational and remedial courses are plentiful (Darling-Hammond, 2007). Overall, the rigor and richness of instruction in school systems serving low-income students and students of color is greatly reduced, thereby distancing these schools even further from the ambitious instruction for which many of them now want to strive.

These hallmarks epitomize and often magnify the instructional deficits of the American school system writ large, and they persist for a myriad of reasons. For instance, low teacher quality, including measures such as lack of experience, little content knowledge, and weak pedagogical training, is prevalent in school systems that serve low-income students and students of color (Darling-Hammond, 2007). Large percentages of these teachers may not be adequately prepared for effective teaching even of a traditional variety; there seems but a slim chance that they will succeed at more challenging, complex, ambitious instruction without targeted coaching and professional development. In addition, low-income school systems typically want for the educational infrastructure that could support both teachers and students in transitioning to instruction that promotes deeper learning, and create the kind of instructional coherence that such a transition requires (Cohen, 2011; Mehta & Fine, 2015a). (I expand on this below.) Finally, numerous reforms – often controversial – have emphasized a teacher-centered pedagogy focused on basic skills for poor students and students of color, on the premise that this will compensate

for so-called "deficient" foundational skills (e.g., Carter, 2000; Cohen & Moffitt, 2009; Edmonds, 1979; Ladson-Billings, 1999).

The perseverance of dry, teacher-centered instruction can be attributed to a host of other reasons beyond those named above, some contested and some uniformly accepted. But the sampling identified here gives an indication of how deeply entrenched this instruction is in high-poverty school systems, and what an obstacle that poses to embracing ambitious instruction for deeper learning.

"**No excuses" schools.** Interestingly, there is a string of "no excuses" schools serving predominantly low-income, Black and Brown students in urban communities, that have pursued a largely traditional, teacher-centered approach to instruction, and leveraged this approach to achieve impressive results. These schools – labeled "no excuses" because they accept no excuses for a lack of student achievement, either from internal stakeholders or external naysayers (Carter, 2000; Wilson, 2009) – are both district public schools and public charter schools, though much more likely to be the latter. Common principles of the school model include a laser-like focus on students reaching and succeeding in college; standards-aligned academics; and "driven and highly educated" teachers (Wilson, 2009, p. 1). In addition, frequent assessment is used to gauge student progress; a clear and rigid behavioral code is in place; and "conventional, whole-class teaching is typical" (Cohen & Moffitt, 2009, p. 215). The results of the "no excuses" approach have been striking, as many of the schools have consistently outperformed neighborhood schools and schools statewide on standardized tests, often reversing the achievement gap between low-income students of color and their more affluent White peers (e.g., Wilson, 2009).

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How "no excuses" schools miss the mark. For many educators, scholars, policymakers, and parents, the "no excuses" approach is a solid answer to the vexing challenges of closing opportunity gaps and subsequent achievement gaps. For others, however, this model misses the mark entirely, both in its cultural and instructional practices. Regarding the model's cultural practices, Love (2019), for example, chastises the "no excuses" approach as "aggressive, paternalistic, and racist ideological teaching practices on dark bodies" (p. 36). Golann (2015) adds another perspective, arguing that the "no excuses" model reinforces "class-based skills and behaviors" (p. 103) as well as general "inequality in cultural skills" (p. 115), and "limits the development of students' higher-level skills" (p. 116). Although advocates of the "no excuses" approach may contend that it creates a culture of success, Love and Golann portray it as blatantly detrimental to students' success and wellbeing.

One could make a parallel argument about the "no excuses" model from an instructional angle. For instance, Mehta and Fine (2015b) point to the plain "recognition that successfully navigating 21st-century adult life requires far more than basic academic knowledge and skills" (p. 1). Therefore, a "no excuses"-type approach that emphasizes basic knowledge and skills, however successful, is insufficient for the sophisticated demands of society today. Similarly, Noguera et al. (2015), in unpacking the notion of equity in education, define equity as "the policies and practices that ensure that every student has access to an education focused on *meaningful learning* (i.e., that teaches the deeper learning skills contemporary society requires in ways that empower students to learn independently)" (p. 3, emphasis in original). Later in their paper, the authors go on to explain that, based on what research has taught us about child development and learning, in order to "really bring deeper learning to all, we need a student-centered approach" (p. 7). A focus on rote learning and memorization acquired via teacher

lectures and student worksheets is unlikely to yield this result, and stands to limit students'

access to meaningful learning experiences.

Yet altering the tradition of teacher-centered instruction in American schools, particularly

the low-income school systems in which this approach is most deeply entrenched, is no small

feat. "While promising, these [deeper learning] initiatives will require many schools to

transform their teaching methods" (Noguera et al., 2015, p. 1), among other things. The absence

of coherent educational infrastructure to support such instructional transformation, and the dearth

of know-how to enact it, make the obstacles to teaching for deeper learning in low-income

schools especially stark. I elaborate on both of these points in the following sections.

Significance of Educational Infrastructure

America has never prioritized the development of a centralized educational infrastructure

to support a common, coherent approach to teaching and learning. Cohen and Moffitt (2009)

identify three primary components of such infrastructure: common curriculum, assessments

aligned to that curriculum, and teacher education that is grounded in the paired curriculum and

assessment. Peurach and Neumerski (2015) further flesh out this concept of educational

infrastructure, adding elements such as school culture; professional development of teachers and

leaders; structures for time and physical space; and instructional resources and data systems.

When these pieces are fully integrated and aligned, and when tools and capabilities are

developed to support the use of such infrastructure, a sturdy foundation results that can anchor a

coherent approach to teaching and learning.

Infrastructure as an enabler. Strong, coherent educational infrastructure enables

strong, coherent instruction. As Cohen and his colleagues explain (Cohen 2011; Cohen & Bhatt,

2012; Cohen & Moffitt, 2009; Cohen, Peurach, Glazer, Gates, & Goldin, 2014), infrastructure

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allows teachers to tie instructional planning to curriculum and assessment. It establishes a framework that helps "define quality in students' work and provide valid evidence of instructional quality" (Cohen & Bhatt, 2012, p. 119). Moreover, infrastructure permits a shared language and common technical vocabulary to emerge, which in turn ensures clarity and understanding among those in the school or school system (Hakanson, 2010; Hutchins, 1995; Lampert & Graziani, 2009; Latour, 1986). These ingredients – particularly shared language – are critical to the professionalization and advancement of teaching. They facilitate the analysis, improvement, and replication of best practices in instruction, thereby increasing the consistency of such practices across the profession (Mehta, 2013a, b; Mehta & Fine, 2015a).

Educational infrastructure is no panacea, of course. Cohen and Bhatt (2012) caution, "The mere existence of infrastructure does not ensure excellent or effective education; that depends on how well the infrastructure is designed and used" (p. 119). The design must fit the aims and scope of the school organization, and structures must be in place to properly operationalize the design and make it accessible to educators. This is not simple work. Peurach (2016), speaking metaphorically, likens the process of "developing and coordinating infrastructure… [to that] of nation-building" in terms of the "extensive investment, effort, and time needed to establish the foundational systems of a functional, productive, and just society" (p. 427). Yet the consequences of *not* developing and coordinating such foundational systems can be dire.

The absence of infrastructure. The absence of educational infrastructure can thwart efforts to enact ambitious instructional practices, as has been the case throughout the history of American schooling. Ours is a fragmented, loosely coupled school system whose elements, though interdependent, tend not to operate in conjunction with one another (e.g., Spillane, Parise,

& Sherer, 2011). This is intentional. In a country that values states' rights and local control, in which citizens have traditionally been wary of centralized control of *anything* – let alone the schooling of their children – it is logical that a decentralized school system exists (Cohen & Moffitt, 2009). Yet this deliberately decentralized, loosely coupled system is at least partly to blame for sustained incoherence and mediocrity in instruction.

Without the educational infrastructure to support a more streamlined, tightly coupled system, U.S. school systems often lose the opportunity to develop the key components of this infrastructure. Unlike some of its international peers, the U.S. has refrained from implementing a common curriculum across states, from aligning assessments that provide reliable evidence of learning within that curriculum, and from developing teacher education programs in which teachers learn how to teach that curriculum successfully (Cohen & Bhatt, 2012). Thus, instructional practice has, for the most part, persistently defaulted to the lowest common denominator – the modest tradition of didactic instruction – and teachers continue to teach as they were taught. With the exception of a smattering of individual schools and a handful of "niche" reforms (e.g., charter management organizations [CMOs], Comprehensive School Reform Designs [CSRDs], International Baccalaureate, etc.) that have created their own educational infrastructure to support a common vision for teaching and learning, few American schools or school systems possess the framework that would enable coherence in instruction (Cohen & Mehta, 2017). U.S. schools therefore are hindered in their efforts to enact the ambitious instruction that could be derived from such coherence.

Infrastructure and low-income schools. Not surprisingly, school systems that serve low-income students and students of color usually struggle most with the absence or weakness of educational infrastructure, for several reasons. First, these systems have the fewest

compensatory supports. Linda Darling-Hammond (2007) writes that, due to the substantial

funding inequities across school districts, "on every tangible measure – from qualified teachers

and class sizes to textbooks, computers, facilities, and curriculum offerings – schools serving

large numbers of students of color have significantly fewer resources than schools serving

mostly White students" (p. 320). This lack of resources is compounded by the existence of

systemic racism, the effects of de facto and de jure segregation, and the prevalence of generally

low expectations that the students in these school systems have historically battled, a legacy that

has paved the way for the inequitable distribution of educational opportunity since the earliest

days of American schooling (e.g., Ladson-Billings, 2017; Lewis, O'Connor, & Mueller, 2009).

Furthermore, although there are pockets of schools and individuals who have proven that poverty

need not prevent academic achievement, poverty does indeed pose daunting obstacles that are

not easy to overcome.

School systems serving low-income students of color, already at a disadvantage in terms

of the scope and severity of the challenges with which they must cope, face an even steeper

climb because of weak educational infrastructure. Peurach and Neumerski (2015) note an

inverse relationship between the coherence of an education system's infrastructure and the

system's focus on student achievement:

> The more weakly developed and coordinated the infrastructure, the greater the need for
> teachers and school leaders to focus their time and attention on addressing or overcoming
> those weaknesses and, thus, the less potential to focus on identifying and addressing the
> educational needs of students. By contrast, the more highly developed and coordinated
> the infrastructure, the greater the potential for teachers and leaders to focus their time and
> attention on leveraging that infrastructure to identify and address the educational needs of
> students. (p. 382)

A school with strong infrastructure is well positioned to support student achievement, whereas a

school with weak infrastructure is stuck with yet another barrier to overcome. Given the

complexity of teaching for deeper learning, a sound educational infrastructure seems critical to provide the foundation for such work.

Complexity of Know-How

In addition to the deep roots of teacher-centered instruction and the absence of educational infrastructure, one of the chief impediments to enacting ambitious instruction is a profound lack of know-how. Teaching for deeper learning requires sophisticated understanding from teachers and school leaders. They must comprehend why ambitious instruction is important, its relationship to deeper learning, what it looks like in action, and how to achieve it. Each of these layers is complex; it is not surprising that few educators have attained such understanding. Indeed, if teachers knew how to teach better – and if leaders knew how to better support teachers in their efforts – they would probably do it.

Know-how unpacked. Know-how of ambitious instruction is a multifaceted thing. It runs against the grain of instruction in American schools, which in itself has multiple implications. For example, implementing a student-centered pedagogy that depends on active learning, collaboration, and discourse requires a "fundamentally different classroom epistemology" (Ball, 1990, p. 257) than teacher-centered instruction. It requires understanding and embracing the critical aspects of how students learn and acquire knowledge: rather than passively receiving information from a teacher, students must instead construct knowledge for themselves via the teacher's facilitation of learning opportunities. Once these ways of knowing and learning are better understood, then that knowledge is applied to teaching practices that facilitate student learning. This different epistemology requires acknowledging and rejecting the deeply ingrained tradition of didactic instruction, a model with great legitimacy that was instilled in most of us as "normal" when we were young students ourselves. In these ways, know-how of

ambitious instruction – of radically changing instruction in any way – involves *un*learning as well as new learning (Cohen, 2011; Cohen et al., 2014; Mehta, 2015; Mehta & Fine, 2015b).

Unlearning in order to learn. The process of unlearning traditional instructional practices, of stripping back the status quo in order to learn a more sophisticated practice of teaching, is challenging for all parties involved. This process necessitates time, a precious resource in schools. Cohen and Ball (1990) write,

> [C]hanging one's teaching is not like changing one's socks! Teachers construct their practices gradually, out of their experiences as students, their professional education, and their previous encounters with policies designed to change their practice. Teaching is less a set of garments that can be changed at will than a way of knowing, of seeing, and of being. (pp. 334-335)

Schools and school districts must build in the time that provides the capacity for such change. School leaders and teachers must then exercise patience and genuinely recognize the gradual, time-consuming nature of this learning and unlearning process. Moreover, they must recognize that adults are not the only ones learning and unlearning; because teaching is "jointly constructed by both teacher and students" (Cohen & Ball, 1990, p. 335), students, too, must be given time to grasp new pedagogy and learn in a different way. Martinez and McGrath (2014) note that, especially for older students who already have years of traditional schooling under their belt, "teachers and principals… often need to actively disrupt students' expectations [about school]" (p. 28) and work to explicitly "dis-orient" them from their previous learning structure and then orient them to a new way of learning.

Beyond the time required for building understanding of and expertise in ambitious instruction, schools must carve out time and create structures explicitly devoted to systematic teacher collaboration. In order to teach in a way that promotes deeper learning, teachers need collaborative opportunities "to learn and then practice new ideas, with modeling, coaching and

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feedback" (Noguera et al., 2015, p. 14). They also need opportunities for collaborative planning and reflection within and across grades and subjects, not only to design meaningful curriculum and assessments, but also to "create a space in which teachers can learn from one another and improve their practice" (p. 14). School leaders, too, need opportunities for collaborative learning to gain the skills necessary to "nurture individual agency and build collective capacity to support fundamental change" (Bryk, Sebring, Allensworth, Luppescu, & Easton, 2010, p. 63). Yet this very notion of collaboration has long been anathema to American schools whose "[c]ellular organization retards rather than enhances colleagueship" (Lortie, 1975, p. 56), thereby adding to the uphill battle of developing capabilities for ambitious instruction.

Finally, in order to cultivate habits of deeper learning, schools must buck another convention of American schooling: the certainty of routine, teacher-centered instruction. Uncertainty and ambiguity are trademarks of deeper learning, on a micro and macro level. Within the classroom, deeper learning increases students' and teachers' vulnerability on a daily basis because they are engaging in complex, non-routine learning and teaching. For instance, it is much riskier and more difficult for a student to articulate her conceptual understanding of the solution to a math problem than to simply record an algorithm and answer on a worksheet. Similarly, there is a great deal more at stake for a teacher to facilitate rigorous student discourse, for "[t]o do such work, teachers must open windows on learners' knowledge, but when they do, all sorts of things may fly in" (Cohen, 2011, p. 184). Teachers relinquish a fair amount of control and smoothness in their classrooms in exchange for the prospect of deeper learning, with its accompanying messiness.

A macro brand of uncertainty also accompanies deeper learning. This form of learning poses inherent risks for students, teachers, school leaders, and school communities as a whole,

because more ambitious instruction and more ambitious learning goals are more difficult to achieve (Cohen, 2011). Students may see their class performance and grades tumble, at least temporarily. Teachers may need to acknowledge deficiencies in their content expertise, as well as in their pedagogical knowledge and pedagogical content knowledge, and work to close those gaps, as well as accept the likelihood that their teaching practice may decline before it improves (Mehta, 2015). School leaders may have to tackle frustration from parents and confront the broader consequences of potentially decreased test scores, all the while supporting students and teachers as they build their capability for deeper learning. Furthermore, "even good [reform] designs typically require executing a strategy for which there is no established game plan" (Bryk et al., 2010, p. 222). At the school or district level, leaders (and, ideally, teachers) must decide which elements of the established institution should stay and which should go, and how to make such changes. Building know-how for ambitious instruction is, indeed, a tall order for a school community.

Consequences of attempting ambitious instruction without know-how. The scope and complexity of building know-how for ambitious instruction may be daunting for schools and districts. Whether a school is pioneering and embarking on its own innovation journey, following in the footsteps of a district that has already experienced success with a particular innovation, or piloting a reform with support and guidance (e.g., a supporting team of researchers or the guidance of a research and development partner organization), there is considerable learning – and unlearning – that must occur in order for a school to change. Moreover, the school or district must acquire an understanding of how to best execute such a learning process; this in itself may pose a significant challenge. (I elaborate on this below.) Knowledge pitfalls abound.

Yet attempting ambitious instruction without the prerequisite know-how – or without an

understanding of how to gain such know-how – typically yields weak results. It is an all too

familiar pattern in American education that waves of instructional reform sweep across school

systems, yet either only the residue of the reform remains, or the core aspects of the reform take

hold in only a small percentage of schools or classrooms (Cohen & Mehta, 2017; Elmore, 1996).

Instruction may *feel* different to the teachers enacting it or the school leaders observing it, but in

essence, it has changed very little from the previous framework (Cohen, 1990). As Cohen and

Ball (1990) write of this trend: "New wine was poured, but only into old bottles" (p. 334). This

result is due in large part to structural issues in the U.S. school system, such as the lack of

educational infrastructure described above, as well as to persistent obstacles posed by

institutional racism. But it is also due to a profound lack of know-how from teachers and leaders

for how to even go about effecting this type of dramatic instructional change.

Tackling Organizational Change

Making the shifts to bring about ambitious instruction – and doing so at scale – requires

organizational learning and organizational change. This presents an additional and fundamental

difficulty for schools and school systems to navigate. It necessitates coping with a fair amount

of uncertainty, complexity, and risk; having the wherewithal and means to pull knowledge from

multiple sources (e.g., from practice communities and from academic research); developing

organizational capacity and capabilities to unlearn old mindsets and skills and learn new ones;

and establishing the structures and practices to do this work collectively as a full organization.

Cook and Yanow (1993), writing about organizational learning from a cultural perspective,

define it as:

> [T]he capacity of an organization to learn how to do what it does, where what it learns is
> possessed not by individual members of the organization but by the aggregate itself. That

is, when a group acquires the know-how associated with its ability to carry out its collective activities, that constitutes organizational learning. (p. 378)

The authors emphasize that organizational learning does not, by definition, constitute organizational change. Here, however, when considering the type of collective learning critical for moving to intellectually ambitious instruction at scale, we are concerned with organizational learning that does, indeed, yield organizational change. Both organizational learning and organizational change must occur if schools and systems are to make any headway in their quest for deeper learning.

In the sections that follow, I unpack several key features of organizational learning that facilitate organizational change. First, I look briefly at the role of organizational imprint and inheritance, and the ways in which these elements must be acknowledged and managed to pave the way for change. Next, I examine assumptions that are often made about how organizational change occurs. I then explore several theories, all close cousins of one another, that develop alternative ways of thinking and reasoning about how such change might occur, as well as explore the systems and structures that have potential to facilitate this kind of change. Through this process, I begin to surface the notion that school-wide or system-wide change, typically anticipated or represented as linear, rational, and straightforward, rarely proceeds as such. Rather, organizational change often follows a circuitous and uncertain path, embraces a cyclical balance of distinctly different types of learning, and necessitates the development of infrastructure that enables the organization to learn how to learn and change.

Organizational Imprint and Inheritance

The imprint and inheritance of an organization refer broadly to that which the entity as a whole carries forward from its past. More specifically, *imprint* denotes 1) the tendency of organizations founded during the same time period, and within a similar environment, to closely

resemble each other in their structure; and 2) the tendency of an organization to "retain the basic characteristics present at its founding" (Scott & Davis, 2006, p. 316). In this manner, "Organizational forms are *imprinted*, and because of their inertial properties [i.e., natural resistance to change], they are likely to retain the features acquired at their origins" (p. 316). *Inheritance*, though akin to imprint, is used here to describe the competencies and routines, norms and values, and systems and structures that accumulate to form the organizational memory and comprise the organizational knowledge that an organization inherits (Aldrich, 1999), and which naturally informs its work and drives the behavior of its members.

Organizational imprint and inheritance are both relevant to efforts toward effecting deep and lasting change in schools. As noted previously, the imprint of American schools has had great longevity: its general structures, practices, and goals have endured since the early 20th century. Diverging from this imprint – or from any organizational imprint – takes some doing. So, too, does deviating from the inherited traditions and norms. As Heifetz, Grashow, and Linsky (2009) emphasize, "Over time, the structures, culture, and defaults that make up an organizational system become deeply ingrained, self-reinforcing, and very difficult to reshape" (p. 51). Given their entrenchment – deep and frequently tacit – reshaping these ingrained elements is difficult under any circumstances, but especially if they have facilitated the work of the organization. Aldrich (1999) writes, "Once developed, routines are fairly resistant to change, not only for organizational reasons but also because they simplify members' lives" (p. 149). Beyond simplifying members' lives, organizational habits and routines generate comfort and familiarity. They also are indicative of prior investment and commitment, both organizationally and individually (Van de Ven, Polley, Garud, & Venkataraman, 2008). None of these features is easy to relinquish.

When the ingrained elements of an organization have yielded success, the idea of altering them becomes even more difficult. Heifetz et al. (2009) point out,

> Many organizations get trapped by their current ways of doing things, simply because these ways worked in the past. And as tried-and-true patterns of thinking and acting produced success for the organization, they also produced success for the individuals who embraced those patterns. (p. 51)

Even when there is a compelling catalyst for change, and when the elements that yielded success in the past are no longer poised to do so, the organization's "tenacity can prevent it from adapting" (p. 51). Certainly, this instinct for tenacity is justified. It is difficult for organizations or their members to leave their comfort zone, to let go of familiar habits and, above all, to move away from that which has brought even a modicum of success in the past. Such movement requires discomfort and disruption, risk and uncertainty, the ability to make tacit knowledge explicit, and an ongoing, multistep process of sensemaking (Weick, Sutcliffe, & Obstfeld, 2005).

The presence of imprint and inheritance thereby complicates the path to organizational learning and change because it demands recognition that a school or school system has existing DNA. In this sense, a school organization can never effect change from scratch; it is always changing to something new from something old. This DNA, then, must be actively managed. In order to achieve organizational change, those leading such efforts need to "significantly displace, reregulate, and rearrange" at least some of the organization's DNA (Heifetz et al., 2009, p. 16). The reworking of organizational DNA is likely to meet resistance; change and learning can be painful. As Heifetz et al. wryly note, "Not many people like to be 'rearranged'" (p. 16). Acknowledging and navigating these dynamics thus become part of the process of recognizing and managing imprint and inheritance, and a prerequisite for successfully supporting organizational learning and change in schools.

Organizational Learning and Change

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Assumptions are frequently made in education about how organizational change occurs, and how subsequent school improvement ensues (Peurach & Glazer, 2012). Stakeholders may seem to believe – or want to believe – that organizational change or innovation, and the learning that accompanies it, follows a linear, predictable sequence of phases. This can be characterized as a stage-wise process, such as "invention—development—testing—commercialization" (Van de Ven et al., 2008, p. 3). In education, the model has been framed as an "RDDU" paradigm: research, development, dissemination, and utilization (Rowan, Camburn, & Barnes, 2004). Peurach, Glazer, and Lenhoff (2016) elaborate, "Basic and applied research feed development and small-scale pilots, from which follow rapid and widespread dissemination and effective use" (p. 610). The authors go on to note that this "sequential, diffusion-centered logic model is highly institutionalized" (p. 610), citing examples of goals and initiatives taken by education organizations and federal education programs that seek to reflect this paradigm. Indeed, many education organizations and stakeholders gravitate toward this approach when envisioning or embarking on a quest for organizational change.

Such an approach to change in schools and systems is appealing. It appears rational, thereby drawing upon the imprinted image of a "rationally organized system" long projected onto U.S. public schools (Mehta, 2013a, p. 39). The paradigm seems to reduce uncertainty and complexity, delineating a methodical path that, though it may be difficult, will at least be straightforward. Furthermore, this approach seems to hold potential for the replication of organizational change and learning, and therefore for an increase in the rate of large-scale school improvement and reform.

There is little evidence, however, to support these assumptions. Change that may seem straightforward and methodical on paper is usually anything but, once underway in practice.

Van de Ven et al. (2008), in their extensive research regarding organizational innovation, have "found no support for a stage-wise model of innovation development and no support for a linear (cyclical) model of adaptive trial-and-error learning" (p. 4). To the contrary, their research illuminates "a different reality from these orderly conceptions of the innovation process" (p. 8). Aldrich (1999), touting an evolutionary rather than stage-wise or developmental model for organizational change, emphasizes that such an approach "assumes that organizations do *not* follow a fixed path of development" (p. 198, emphasis in original). Rather, organizational change is usually highly iterative, contingent upon the interactions between internal and external contexts or events, and therefore bathed in ambiguity.

This is especially true in the field of education. Cohen et al. (2014), in their study of three prominent CSRD organizations' approaches to design-based school improvement, speak to these popular yet unsupported assumptions of a rapid, sequential, stage-wise process of change: "We found no evidence that the work proceeds in accord with such assumptions" (p. 25). Moreover, the research team found no evidence to prop up these assumptions elsewhere in the field. Multiple reasons may account for education as particularly unfertile ground for the RDDU model and the assumptions that undergird it. Peurach et al. (2016) highlight, among them: the absence of "clear, shared understandings of the problems of (and goals for) schools" and absence of a robust knowledge infrastructure, as well as complicated and interdependent relationships between schools, their environments, the system or "hub organization" guiding improvement, and the models for change they seek to implement. Given these hindering circumstances, and the dearth of evidence to support conventional assumptions of organizational change writ large, Cohen et al. (2014) conclude that the work of large-scale school change, learning, and subsequent improvement "is more fruitfully framed not as an orderly progression from applied

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research to widespread utilization but as a collection of puzzles that can be understood and managed, but that often unfold in overlapping and nonsequential ways" (p. 26).

  Relevant theories of organizational change. Considerable scholarship substantiates the notion that organizational change is a nonlinear and uncertain process, occurring through a cyclical balance of disparate yet mutually constitutive learning behaviors. Van de Ven et al. (2008) describe these behaviors as convergent and divergent learning. Convergent learning involves: trial-and-error testing; "implementing [existing] ideas and strategies"; continually "integrating and narrowing" established knowledge in a "linear periodic pattern"; and relying on unitary leadership that encourages "unity and goal consensus" (p. 185). Such behaviors are distinctly different from those of divergent learning, which emphasizes: exploration and discovery rather than trial-and-error testing; "creating [new] ideas and strategies"; continually "branching and expanding" new knowledge in a "random or chaotic pattern"; and relying on pluralistic leadership that encourages "diverse views" (p. 185). Despite the obvious contrast between these learning behaviors, Van de Ven et al. frame them as symbiotic, a "repeatable cycle of divergent and convergent phases of activities" (p. 186) that supports the processes of organizational innovation and change. Because these are inherently complex, messy, and uncertain processes, they demand periods of "learning by discovery" (divergent learning) as a "precondition for learning by testing" (convergent learning) (p. 81), in a pattern repeated over time by the organization.

  This cyclical pattern can also be characterized as a relationship between the exploration of new possibilities and the exploitation of existing knowledge (Hatch, 2000; Peurach & Glazer, 2012; Peurach et al., 2016). Exploration, like divergent learning, includes "things captured by terms such as search, variation, risk taking, experimentation, play, flexibility, discover,

innovation" (March, 1991, p. 71). Exploitation, on the other hand, is similar to convergent

learning in that it includes "such things as refinement, choice, production, efficiency, selection,

implementation, execution" (p. 71). Both types of behavior are essential to an organization's

success, and they must occur in balance; too much of one or too little of the other can be

detrimental to organizational learning. March (1991) points out that organizations continually

make explicit and implicit choices between exploration and exploitation. These choices, in turn,

lead to trade-offs between "short-run and long-run concerns and between gains to individual

knowledge and gains to collective knowledge" (p. 74), as well as between degrees of

predictability and uncertainty. Such tensions must be managed in order to maximize

organizational learning and change.

Running parallel to these iterative models of exploitation and exploration, and of

divergent and convergent learning, are three additional models for organizational learning and

change. The first is Argyris and Schön's (1978) theory of single-loop and double-loop learning.

Single-loop learning refers to organizational learning in which an error can be diagnosed and

fixed without the organization's amending its existing practices or goals. The latter term,

double-loop learning, occurs "when an error is detected and corrected in ways that involve the

modification of an organization's underlying norms, policies, and objectives" (p. 3). Argyris and

Schön posit that these types of learning should not be considered binary and mutually exclusive

but instead placed on a continuum, with both playing a role in an organization's learning.

Similarly, Heifetz et al. (2009) distinguish between the technical and adaptive

components embedded in most organizational challenges. They contend that the two elements

necessitate different types of learning and leadership that often complement one another.

Technical problems, for example, even if difficult and complex, have "known solutions that can

be implemented by current know-how… [and] can be resolved through the application of authoritative expertise and through the organization's current structures, procedures, and ways of doing things" (p. 19). Adaptive challenges, however, involve changes in "people's priorities, beliefs, habits, and loyalties. Making progress requires going beyond any authoritative expertise to mobilize discovery, shedding certain entrenched ways, tolerating losses, and generating the new capacity to thrive anew" (p. 19). In order for an organization to effect change, it should expect to confront technical and adaptive problems – or, more likely, challenges with technical and adaptive components – and engage flexibly in the distinct yet mutually adaptive learning processes that address both.

Finally, Lindblom (1959), writing in the policy realm, makes a distinction between what he characterizes as the branch approach and root approach to complex problem solving and change. He explains the distinction as such:

> [T]he branch method and root method, the former continually building out from the current situation, step-by-step and by small degrees; the latter starting from fundamentals anew each time, building on the past only as experience is embodied in a theory, and always prepared to start completely from the ground up. (p. 81)

Lindblom goes on to argue that, despite the enormous attractiveness of the root method and the allure of the idea that we could actually pull up a policy or an organization or a school by its roots and start fresh, it is an impractical and frankly impossible approach to change, usually doomed to fail. Such an approach relies on commencing the change process with broad consensus about the objectives of a particular change initiative and the values undergirding it, followed by a comprehensive combing through of all possible alternatives and outcomes. Lindblom warns, "Limits on human intellectual capacities and on available information set definite limits to man's capacity to be comprehensive" (p. 84), and concludes that such a method is simply not feasible for large, complex problems. Instead, when it comes to solving thorny

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problems that require significant change, Lindblom advocates proceeding through a "*succession of incremental changes*" (p. 86, emphasis in original) and steering clear of a "futile attempt at superhuman comprehensiveness" (p. 88). This approach requires some "muddling through," to be certain, but, Lindblom contends, it is the optimal and most prudent method for approaching complex change.

There is persuasive consensus across the preceding research, then, that organizational change and learning, whether within schools and school systems or other types of organizations, is an ambiguous, complex, iterative, and nonsequential process. School improvement that requires dramatic, deep, lasting change is by nature uncertain and nonlinear. It is comprised of distinct yet mutually constitutive learning behaviors – the one focused on learning by discovery and divergence to pursue new ideas, and the other focused on learning by converging on and refining the newly discovered knowledge – that continually build upon one another in a cyclical manner. Through these processes, schools can begin to collectively and incrementally learn and change, gradually working to meet new goals for ambitious instruction.

Learning-to-learn infrastructure. In order to enact the organizational learning processes unpacked above, schools and school systems must develop a learning-to-learn infrastructure. This entails the contexts conducive to building organizational capacity and capabilities that can then, in turn, enable such learning. For example, Peurach et al. (2016), in explaining what is involved in order for school improvement networks to learn to learn (what Bateson [1971] calls "deutero-learning" or second-order learning), point to the need to "work explicitly and proactively (rather than tacitly and reactively) to align their strategies, operational capabilities, and cultural norms to support the production, use, and management of intellectual capital" (p. 614). It is noteworthy here that the emphasis for organizational learning and change

– and eventually, replication – is less about specific "physical characteristics, formal structures" (p. 618) or particular best practices, and much more about developing the "dynamic capabilities" (Peurach & Glazer, 2012, p. 169) of an organization that will facilitate continuous learning and change.

This type of learning-to-learn infrastructure, one through which an organization can develop dynamic capabilities for continuous learning and change, is foreign to many organizations. In fact, according to Argyris and Schön (1978), "organizations tend to create learning systems that inhibit double-loop learning" (p. 4) and therefore need to pivot in order to create the capacity and capabilities for learning to learn. Yet this pivot is itself challenging. Organizations that are struggling to make change, even if they are aware of the struggle, are often hindered in their ability to alter their learning systems "by the very same features of their learning systems that caused their organizations to be ineffective in the first place" (p. 107). This fight to create conditions ripe for learning to learn is particularly challenging for school organizations, which, once again, are known more for their imprint and static ways than their capacity for innovation or their ability to nimbly and flexibly adapt. In this sense, developing a learning-to-learn infrastructure adds an additional layer to the problem of organizational learning and change, one that schools and systems must tackle in conjunction with numerous other obstacles.

Conclusion

This dissertation examines educators' efforts to construct, develop, and animate novel, whole school models that pursue excellence and equity through intellectually ambitious instruction. It seeks to better understand the "what" and the "how" of such work – particularly in the context of low-income school systems – and the experiences of a range of players involved.

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Moreover, this study unpacks the factors that complicate these efforts, focusing both on their type and scope.

This literature review lays the conceptual groundwork for this research. In it, I depict the landscape for the changes we desire in American public schools – teaching for deeper learning, and achieving excellence *and* equity – by clarifying the goals and contexts our schools have had in the past, and identifying the new goals and contexts for which we now strive. I then lay out three critical reasons that such changes are immensely difficult in our school system: 1) the tradition of instruction U.S. schools, especially in high-poverty schools; 2) the significance of educational infrastructure and the problems created by its absence; and 3) the complexity of know-how and of unlearning old mindsets and skills in order to learn new ones. I close by unpacking a fourth, critical obstacle to the successful enactment of these changes: the organizational learning and change required and, embedded in that, the organizational imprint and inheritance that must be overcome – challenges that would plague any organization seeking dramatic change. In laying this conceptual groundwork, I aim to provide a lens that contextualizes the findings and analysis that follow the subsequent methods chapter.

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CHAPTER III

Methodology

Research Questions

American schools stand at an intriguing juncture. They face ambitious instructional goals that require the development of new models for whole school improvement. There is little precedent for such work, however, and therefore no established knowledge base from which schools and school systems can draw. The education leaders charged with constructing new models have few examples of how other leaders approach this work – examples that might inform their own work. There are limited instances of whole-school models of this sort that have shown positive effects on students' educational experiences and outcomes, and only minimal accounts of processes for transforming schools from the status quo to novel designs for ambitious instruction. Furthermore, the very notion of all students and teachers engaging in cognitively demanding teaching and learning – and the infrastructure such work requires – runs against the grain of a deeply rooted model of schooling. And, as is often the case, these challenges are exacerbated in school systems that serve low-income students and students of color, for they are the least well equipped (due to underlying institutional practices and conditions) – and therefore face the greatest uphill climb – for such a dramatic shift in instructional practice. Currently, leaders who embark on this work do so with slim, if any, guidance.

Framed by this educational landscape, the primary purpose of this dissertation is to examine how a school system might develop and animate these types of novel, whole school models, and to better understand the challenges thereof. Four questions guided this research, with the fourth question crosscutting and complementary to each of the first three questions:

1. What approaches do education leaders use to construct such models?

2. What are the central components of these models?

3. How do leaders and teachers animate these models in practice?

4. What complicates these efforts?

On the surface, these questions might suggest a straightforward approach to educational innovation grounded in assumptions and methods of rational problem solving. For instance, education leaders would construct a school model by conducting and collecting research – of their own practice and drawn from existing scholarship – to inform a novel design. The central components of the design would be spare but significant: a small number of targeted interventions. The model would be animated via unidirectional processes, with designers disseminating to leaders, who in turn would disseminate to teachers, and coach them to implement the design with fidelity.

But, as discussed in Chapter II, there is a developing body of research on whole-school change – largely derived from research on organizational change and innovation – that challenges these well-established theories and offers alternative conjectures. From this perspective, for instance, the approach to constructing a school model would be an uncertain, complex design process that involved cobbling ideas from various places, including practice communities and scholarship. The resulting model would be an intricate, multi-component design intended to address multiple, interdependent problems simultaneously. Animating the

model in practice would involve designers collaborating with coaches, leaders, and teachers to learn to use the new designs, as well as to adapt and improve them via equally collaborative, but complex, organizational learning.

Given the absence of precedent for such work, I deliberately asked questions that would allow varied responses to surface. I designed a study that would be open to findings of a straightforward, rational nature, to findings riddled with complexity and uncertainty, or to a combination of the two. I elaborate on the research design and methodology in the sections that follow.

<center>**Research Design**</center>

To address these research questions, I designed a mixed-methods, embedded single-case study (Yin, 2003) that relied on ethnographic approaches to research. I wanted to gain a deep, rich understanding of how education leaders and other key players – designers, teachers, and so forth – might go about constructing and animating a novel model for whole school improvement, given the context articulated above. I also wanted to insert myself into the lived experiences of these players (to the extent possible) so that I could attain some degree of "ethnographic empathy" (Behar, 1996, p. 167) and truly grasp the challenges, large and small, associated with this ambitious, daunting, and important work. To achieve these goals, my case homed in on the efforts of one charter management organization (CMO), Achievement First (AF), while it was in the thick of such work.

The selection of this particular research design enabled a "holistic" and "highly complex and nuanced understanding" (Hesse-Biber & Leavy, 2011, p. 256) of the focus organization's work. It drew on multiple sources of data and intentionally examined this work within its real-life context (Yin, 2003) over a significant period of time. The study design provided ample

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opportunity for "thick description" (Geertz, 1973) of the processes that developing and enacting

a new school model entail, as well as an opportunity to make meaning of this work specifically

from the perspectives of those involved. Moreover, by using an embedded design, this study

gave equal attention to dual units of analysis, warranted in light of the inherently symbiotic and

unique relationship between the two.

Units of Analysis

Although the primary unit of analysis in this study was AF's Greenfield Project (AF's

initiative to develop a novel school model), there were technically two units of analysis nested

within this case. The first was the umbrella network of AF, known as Achievement First

Network Support (AFNS), which initiated, guided, and oversaw the development and enactment

of the novel school model. Throughout this study, I refer to this as the network or organizational

level, which included network-level leaders and staff – and their activities – as well as the

Greenfield design team charged with developing and, later, supporting the enactment of, the

components that comprised the new model's blueprint. (At times I tease out analysis specific to

the design team and separate it from the broader AF network; I have tried to identify those

instances explicitly.) I collected a range of data at the network level, especially concerning the

design team, including individual interviews, multiple types of observations, and various artifacts

and documents.

Within the organization, I focused my attention on a second unit of analysis: the

individual school that first piloted AF's novel model. The school level included the school

leaders and staff, as well as the teachers and students in individual classrooms and, when

relevant, students' families. This level also included school-wide and classroom-specific

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activities, and the school facility and physical features thereof. The types of data I collected at the school level paralleled those at the network level.

By giving equal attention to these dual, nested units of analysis, I created the conditions necessary for a holistic, nuanced understanding of the research questions I sought to answer. I acknowledged that both levels of analysis were equally important to doing this work, as individual units and as inextricably linked entities. Furthermore, I honored the relationship and interaction between these levels, and between the players within these levels, knowing that exploring this interplay was critical to understanding the work of these actors.

Case

This study examined specific work in a specific context: how educators go about the task of constructing and animating a novel school model in which teachers and students engage in ambitious, cognitively demanding teaching and learning. I was especially interested in how educators execute such work in low-income school systems, as, per my literature review, such an environment presents the greatest need for such work but often the greatest challenge. In light of this specificity, I purposively selected AF, an organization that met these particular parameters, as the case for this research. I provide background on AF, and on its initiative to develop a novel school model, in the section below.

Achievement First Background

Achievement First is a high-performing charter management organization founded in 2003 to provide equal educational opportunity to all students and prove what is possible when low-income students of color have access to an excellent education. The organization's beginning preceded its founding as a CMO; an initial flagship middle school, Amistad Academy, opened in New Haven, CT in 1999. After achieving considerable success in its early years,

Amistad grew into AF, a network of non-profit, public charter schools across three states. At the time of this writing, AF operated 37 schools serving approximately 14,000 students in five cities: New Haven, Bridgeport, and Hartford, CT; Providence, RI; and Brooklyn, NY. The majority of its students were Black and Latino, and 85% qualified for free or reduced-price lunch (Achievement First, 2018). The CMO planned to increase the number of students it served by 50% over the next four years.

The traditional school model that AF had developed, known within the organization as AF Classic, was typical of many successful, "no excuses" charter schools. Every aspect of the school model was, as the name suggests, focused on student achievement. AF Classic combined rigorous, college-preparatory and standards-aligned academics with extended learning time and strict, high expectations for behavior. The academic content was traditional and the pedagogy was primarily teacher-centered; instruction was systematically data-driven. The approach had yielded consistently impressive results across the network as measured by standardized tests and college acceptance rates.

Greenfield background. In 2014, AF began the process of building and launching an innovative school model, which it called Greenfield. The school model was developed in response to the relatively low college graduation rates of AF alumni and the particular "soft skills" struggles alumni reported experiencing in college, as well as to address gaps in higher order thinking skills revealed by Common Core State Standards-aligned state assessments (Sawch, 2016), among other factors. With these needs in mind, AF pictured an open field (hence, "Greenfield") and asked, "If you could build any school, what would you build?" (Achievement First, n.d.). According to AF, Greenfield sought to "provide rigorous, high-quality instruction with a nurturing school community focused on developing self-motivated

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learners, problem-solvers and leaders" (Achievement First, n.d.). The Greenfield schools

differed from AF Classic schools in distinct ways, including: an emphasis on small-group and

individualized instruction as well as enrichment; the integration of digital and authentic learning

opportunities; and a focus on the development of intrinsic motivation and executive functioning

skills. (I elaborate upon the context behind the Greenfield initiative and the process of

constructing the model in Chapter IV, and the central components of the model in Chapter V.)

With Greenfield schools, AF was attempting something ambitious and unusual in

American public education. AF was a school system that had developed and honed a recipe for

success within low-income communities often denied adequate opportunity for educational

achievement. The organization had enacted this recipe to attain consistently high levels of

achievement, on multiple measures and at scale. This in itself was a significant accomplishment.

With Greenfield, AF sought to innovate on its existing school model and create a model that

promoted greater levels of engagement and higher levels of achievement; in essence, a model

that yielded deeper learning. In light of this context, AF's Greenfield Project can be seen as a

truly "unique case" (Yin, 2003) from which practitioners, researchers, and policymakers stand to

learn a great deal.

Conversion school. After the initial development of a blueprint for Greenfield, and

subsequent prototypes and small pilots of select components, AF launched the model in three

grades – kindergarten, fifth and sixth grade – of an existing elementary (grades K-4) school and

middle (grades 5-8) school. The next year, AF converted the entire elementary school from the

AF Classic model to Greenfield, and merged the Greenfield fifth and sixth grades with the

elementary school, thus forming a K-6 Greenfield school where previously there had been a K-4

AF Classic school. In the years following, AF opened additional Greenfield schools, but,

importantly, these were all new middle schools begun from scratch, starting with a single fifth grade and adding a new grade each year (as is typical of AF, and other charter networks, when opening new schools).

This dissertation intentionally focused on the conversion Greenfield school, not the new Greenfield schools opened from scratch. I made this choice for two reasons. First, the conversion school was the initial Greenfield school, and, by my reasoning, therefore the most useful case for understanding the process of constructing and animating a novel school model, and grasping its trajectory over the course of several years. Second, the process of voluntarily converting a school to an entirely new model (i.e., not changing the school because of a state takeover or because of designation as a turnaround school) is rare, and there are few accounts of this process. Novel school models tend to be implemented in start-up schools, rather than converting existing schools. Furthermore, if the field of public education is to strive for significant, widespread change to achieve new, ambitious goals for instruction, one can assume that the bulk of such innovation will need to happen in existing schools. The likelihood of opening a sufficient number of new schools to achieve such goals is slim, and would essentially require closing an enormous number of existing schools – not an appealing or even a feasible option.

Given the deliberate focus on AF's Greenfield conversion school, the dual units of analysis in this study became even more significant. The dissertation examines the experience of novelty and change at the organizational level *and* at the school level. Some aspects of this experience were unique to the organization and some were unique to the school; most aspects were a blend of the two, because the work that transpired was a collaboration between players at both levels. (As I named previously, there was an inherently symbiotic relationship between

these two units of analysis.) Yet, because AF operated a single conversion school among its early Greenfield cohort, certain Greenfield processes, features, and challenges were specific to the conversion school, whereas others were general to all Greenfield schools as a result of their common attachment to AF. For the purposes of this research, one should assume that all school-level data and analysis are reflective of the single Greenfield conversion school, even though elements may also happen to be applicable to the other Greenfield schools.

Data Collection

Data collection for this study transpired over approximately one year, and included observations, interviews, and document and artifact review. By using a comprehensive mix of methods and multiple data sources, I was able to more deeply grasp the lived experiences of Greenfield actors and the nuts and bolts of the Greenfield work itself, as well as represent these perspectives and this work from a 360-degree angle. By collecting data for more than 13 months, from May 2017 to June 2018, I could truly immerse myself in the work of bringing a novel school model to life, and track its trajectory across a full year. I unpack these data collection methods in the subsections that follow.

Observations

This research was anchored in observation. During more than 13 months of data collection, I spent approximately 400 hours, spread across nearly 100 days, observing a range of Greenfield-related activity. Observations consisted of both direct observation and participant observation, and spanned multiple categories, which I describe below.

To gain the holistic understanding of the Greenfield Project that I sought, it was essential that I use a combination of direct observation and participant observation. The former allowed me to step back and observe a specific context, or phenomenon within that context (Yin, 2003),

whereas the latter provided an opportunity to "perceive reality from the viewpoint of someone 'inside' the case study rather than external to it" (p. 94). For direct observation, my identity as a researcher was transparent, but I consciously limited my engagement with participants in the activity at hand. I occasionally peeked over a shoulder or, when I could do so unobtrusively, asked a question, but otherwise I focused on quietly "lurking," as one Greenfield actor (with a wink) characterized my role. For participant observation, again, my identity as a researcher was transparent, and I fully participated in the activity at hand. Behar (1996) refers to participant observation as a paradoxical methodology, "split at the root: act as a participant, but don't forget to keep your eyes open" (p. 5). I tried to embrace this paradox, throwing myself into practice or discussion with teachers during a professional development (PD) session, or collaborating with designers during a design team meeting, while also maintaining my researcher lens and thinking about what was happening and why. It was a challenging but worthwhile exercise in cognitive multitasking and metacognition.

I aimed to use direct observation and participant observation purposefully throughout the study, while also being flexible in their use. At times I deliberately went into an observation with a direct observer or participant observer mindset, knowing that particular perspective would be most applicable to the setting and to the type of data I hoped to collect. Most often, however, I toggled between direct observation and participant observation, shifting between the two as appropriate and useful over the course of an activity. For example, when sitting with a group of teachers during a PD, I might step back and just listen to some of their discussion of a particular topic (direct observation), but then later in the session join in their practice of a specific instructional technique (participant observation). Occasionally, I intended to use one form of observation but circumstances dictated that I use the other. When I observed the practice of

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student Circle, for instance, some teachers requested that I sit on the outside and observe while others asked that I be part of the Circle and fully participate. In such contexts I always deferred to the wishes of the Greenfield actors.

Throughout my observations I took fieldnotes to record what occurred during each activity, as well as record my preliminary thoughts about what occurred. I jotted initial notes in a notebook while observing or, if not feasible (e.g., during certain participant observations), immediately thereafter. These jottings were primarily descriptive in nature, and captured: my initial impressions of the activity, including the physical setting and actors present; the sequence of events that transpired; elements of the activity that struck me as significant – either significant to me as a researcher or, based on their reactions, significant to the people whom I was observing; and, to the extent possible, participants' exact words and phrases and "indigenous meanings" (Emerson, Fretz, & Shaw, 2011). My initial jottings also captured (through asides and brief commentary) questions or reflections that arose for me while observing. As soon as possible after the observation, to preserve the "immediacy of lived experience" and ensure "fresher, more detailed recollections" (p. 49), I typed up a more extensive version of my initial fieldnotes. This process yielded "thick descriptions" of the observations (Geertz, 1973), complemented by my preliminary interpretations. I supplemented these fieldnotes with regular reflective memos, which served as initial interpretive writings and foundational pieces for data analysis (Emerson et al., 2011).

Classrooms and school. I conducted regular, informal observations and walkthroughs[3] of the school and classrooms. These observations varied in length from short, ten-minute windows of classroom instruction to full period, 40-minute views. I observed all core academic

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[3] "Walkthroughs" refer to informal but purposeful walks through the school, such as spending five or ten minutes in each of a subset of classrooms or being present in the hallways during a particular time of day.

subjects, self-directed learning (SDL), and enrichment classes and, with only a few exceptions, did so across all grades K-6 at least once (often several times). Over the course of these observations, I managed to see nearly every teacher in the school in action, and many of them multiple times. I also spoke casually with students, asking them about their work or some aspect of their day, answering their occasional questions about my work, and happily obliging when they beckoned me to read their writing or celebrate their school accomplishments. Such comprehensive classroom and school observations gave me deep insight into the day-to-day process of enacting a novel school model: what it looked like and felt like to "do" Greenfield on a daily basis. In addition, I spent two full days shadowing a small cohort of students, one an upper elementary group (third grade) and one a middle school group (fifth grade), so that I could better grasp a day in the life of a Greenfield student – every class and activity from 7:15am to 4:00pm – from the student's perspective.

Finally, I conducted a separate set of brief observations outside of the focus Greenfield school. I observed classroom instruction in two AF Classic schools – one elementary and one middle – for several hours apiece, as a point of comparison and to refresh my memory about the AF Classic model in action. (I had spent some time in AF Classic schools prior to this research, and was already familiar with the model.) I also conducted several hours of observation in a second Greenfield school, a middle school with one grade in its first year of operation, as another point of comparison.

School-wide events and activities. The school regularly held school-wide and grade-specific events, and I attended many of these. Some took place outside of school hours, such as a parent orientation and dream team meetings (Greenfield's version of parent-teacher conferences), but most took place during the school day. These events included community

meetings for grades K-2 and grades 3-6, "Funtastic Friday" celebrations, a Black History Month celebration, and other school assemblies and rituals. Observations of these events and activities gave me a picture of other dimensions of a Greenfield school – some prescribed by the Greenfield model and some developed internally by the particular school – and especially helped me to understand practices the school took to build community and culture. These observations also gave me an opportunity to chat informally with students' families who were in attendance (conversations usually initiated by the families) and hear their thoughts on the activity at hand or on a particular element of the school or of Greenfield.

     Expeditions. Three times a year, the Greenfield model dictated that regular classroom instruction cease for "expeditions." Expeditions were two-week periods of beyond-school learning, typically involving project-based learning or other types of authentic learning experiences, as well as field lessons and guest educators, and culminating in a "showcase" for students to show off their expeditions learning to families and guests. Each round of expeditions, I observed a range of content and topics and in action. Moving across all grades, I attended portions of field lessons and trips as well as school-based expeditions instruction, and I made a point of rotating among the various grades and topics to see as many showcases as I could. These observations helped me deeply understand one of the core, and arguably most unique, components of the Greenfield model, and see its different manifestations and the range of experiences it provided for students, staff, and families. In order to understand the full arc of this learning modality, I tracked three expeditions across their different stages: a photojournalism expedition for grades 3-4, a gardening and composting expedition for kindergarten, and an acting expedition for grades 5-6. For each of these expeditions, I chaperoned a half-day trip and field lesson, observed school-based lessons, and observed the culminating showcase.

Staff and teacher meetings. As with all AF schools, the Greenfield school held regular meetings, in small groups and large, among staff. Every Friday, students were dismissed early so that staff could come together for meetings, PD, and for classroom-specific tasks. On average, I observed two Fridays a month, usually sitting in on a whole-staff meeting, a grade team meeting (I rotated among teams so that I would observe all grades), a PD session or two, and participating in an adult Circle (a culture-building practice that mirrored the student Circle). I observed other types of staff meetings as well, such as meetings between school-level leaders and Greenfield designers or network-level leaders, department-wide or subject-specific data-analysis meetings, and coaching meetings between a teacher and an instructional coach (usually a school-level leader). Observing this broad array of meetings enabled me to dig into much of the day-in, day-out "adult work" that comprised the enactment of Greenfield.

Professional development sessions. Similar to staff meetings, consistent and systematic PD was a core element of all AF schools, and of Greenfield schools, too. Professional development covered Greenfield-specific topics such as new curriculum or preparation for expeditions, as well general school topics such as student and staff culture or family communication. I observed foundational summer PD, including 18 hours of Greenfield "All Leader Training" in June, 13 hours of Greenfield "New Teacher Training" in July, and 20 hours of Greenfield "All Teacher Training" in July and August. Once the academic year began, the school had ongoing PD most Friday afternoons, as well as four full-day, school-based PD days interspersed throughout the year. As mentioned previously, I observed Friday afternoon PD about twice a month – sometimes adding a Friday if there was a particular PD session I wanted to see – and I observed all four of the full-day PD days. The scope of my observations, direct

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and participant, greatly expanded my understanding of what it took to animate the Greenfield model.

Design team meetings. The Greenfield design team had various types of meetings. Some were for design team leads only while others were for the full team; some meetings were conducted in-person, others were virtual and conducted via video conference; some meetings lasted an hour or two whereas others were full-day or multiday sessions. I observed full team and leadership team meetings, short sessions as well as full-day "stepbacks" and retreats sprinkled throughout the year, for a total of approximately 45 hours of design team meeting observation. The meetings generally focused on the continual development, refinement, and implementation of the Greenfield model, though they also included attention to team culture-building and professional growth. Through observations of these design team meetings, I was able to gain a deep appreciation and understanding of the behind-the-scenes work involved in designing a novel school model and constantly iterating on that design, as well as gain another perspective on the process of animating the model – and the challenges the team grappled with throughout.

Interviews

Interviews were a critical partner to observations in this study. I engaged in frequent, informal conversation with Greenfield actors, as well as formal, semi-structured interviews with a purposefully chosen subset of 14 actors. Through these interviews, formal and informal, I gained a rich understanding of participants' lived experiences with the Greenfield Project, and of the meaning they constructed from such experiences. By using semi-structured interviews, specifically, I was able to balance a desire to pursue particular lines of inquiry with an acknowledgment that the type of work I was studying must, to some extent, be "reported and

interpreted through the eyes of… interviewees" (Yin, 2003, p. 92); this format gave the interviews that blend of direction and freedom. Furthermore, I was genuinely interested in participants' Greenfield stories and in their meaning-making of these stories, and therefore saw these interviews as one of several means to attaining a particular brand of holistic and empathetic insight. Indeed, these conversations were instrumental in illuminating, corroborating, and complicating information and ideas from my observations, as well as guiding my future observations. Because interviews and observations occurred contemporaneously, a dialogue began to emerge between what I heard, saw, and experienced.

Participant sampling. This dissertation was comprised of participants from the school and network levels, involved in ways both formal and informal. By nature of the research design, and because of the scope of the study – its depth and duration – I interacted informally with multiple players across the school and network levels on an ongoing basis, such as via casual conversation in the hallway or discussion during a PD session. This was deliberate. It provided ongoing opportunities for Greenfield players to ask questions of me and me of them, as well as to engage in organic and impromptu conversation, both heavy and light. Such regular interaction with, and immersion among, a large group of actors enabled me to hear diverse perspectives beyond the voices of those I interviewed formally, fill in gaps in my knowledge, and add further shades of gray to my understanding of the Greenfield Project.

For more formal interactions with participants, namely the semi-structured interviews, I relied on purposive sampling. Due to the embedded nature of the case study and the specific research questions that guided it, I intended from the outset to interview a variety of school- and network-level players in order to get a variety of perspectives on the Greenfield work. I designated in advance categories of participants that I knew would be critical to my

understanding of Greenfield, including network- and school-level leaders, members of the Greenfield design team, and teachers and staff. I waited to identify and contact potential interviewees until several months into the study, however, for several reasons. Waiting until the study was fully underway allowed me to begin building relationships with participants, giving them a better sense of my role in the school and my purpose with the study, and therefore increasing their comfort with the research and often piquing their interest. It gave me a chance to familiarize myself with the range of actors involved in Greenfield – the specifics of their roles, their particular style in enacting those roles, and some of the context behind their roles (e.g., the extent of their experience with Greenfield or with AF) – and consider what combination of participants would provide the diversity of perspective I was seeking. Finally, delaying the process of identifying potential interviewees provided an opportunity for early theory to emerge within my data (based on extensive observation and artifact review), thereby pushing me to seek participants who, again, might provide a variety of perspectives on these preliminary theories, and whose specific roles seemed crucial to grasping certain dynamics of the work.

Ultimately, I selected possible individual participants within each of the pre-identified categories. The terms of the study ensured full anonymity for all individual participants, so I have characterized them only by their category within Greenfield. The group included: six Greenfield network-level leaders and designers; four Greenfield school-level leaders; and four Greenfield teachers. With this group of participants, I had a heterogeneous group in terms of role (at the category level and the individual level, i.e., teachers of different grades and subjects – academic and non-academic, school leaders who oversaw different grades and subjects, and network-level leaders and designers who focused on different aspects of the Greenfield work), gender, race/ethnicity, and, to the extent I could predict from the initial months of the study,

perspective on the Greenfield work. (To clarify, I did not seek a mix of participants who seemed simply "for" or "against" Greenfield, but rather, actors who each seemed to have somewhat nuanced, varied ideas about the work.) I also had a homogenous group in terms of minimum level of experience as educators (i.e., all participants had demonstrated substantial experience in the field) and in terms of their time with Greenfield: all participants had been with the Project since its early days of design and/or implementation. The rationale for this homogeneity was twofold. First, it was important to me that participants had sufficient experience in the field that *Greenfield* would feel new to them, rather than teaching or working in education feeling new in general. Second, I wanted to hear from actors who had a real grasp of Greenfield, and could knowledgeably speak to the process of developing and animating Greenfield, and to their own trajectory with that process. I was fortunate that many actors fit these descriptions, thereby giving me choice in my selection. Additionally, I was fortunate that every potential interviewee whom I contacted was available and willing to participate.

One might notice that I did not include students or families in my sample. This was not for lack of interest in their viewpoint, nor was it intended to minimize the importance of their role as stakeholders in Greenfield. To the contrary, I viewed students' and families' perspectives of Greenfield as enormously important, and saw them as the most essential constituencies in the Greenfield Project; the initiative was, after all, meant to serve them. Moreover, I would have liked to elevate students' and families' voices through this study. I chose not to formally interview them, however, because the focus of this research was on developing and animating a novel model, and, in the case of Greenfield, that process was predominantly the domain of network- and school-level leaders, designers, and teachers. Students' and families' voices did, however, surface in the data via my observations, artifacts, and informal conversations.

Interview mechanics. I conducted a total of 28 semi-structured interviews, two apiece with 14 Greenfield actors. The interviews, which began in the sixth month of research and continued seven months thereafter (until the study's conclusion), were typically spaced two to three months apart for each interviewee. Once I selected my tentative list of participants, I contacted each person individually by email to explain the purpose and scope of my request, as well as to share a consent form. Interviews took place in person (with a few exceptions), at the participants' convenience, and in a private space of their choosing, typically an office or empty classroom within the school or at the network offices. Due to logistical constraints, interviews with two participants were conducted by phone, and interviews with two others were conducted via video conference.

Prior to beginning each interview, I briefly reminded participants of the study's purpose and of their rights within the study, and gave them an opportunity to ask questions. The interviews lasted roughly an hour and, with participants' explicit written permission, were audio-recorded, including those conducted via phone and video. Recording the interviews allowed me to fully engage in the conversations rather than be preoccupied with copious note taking, and enabled later transcription for the purpose of close analysis. I did, however, jot down some "working notes" (Seidman, 1998, p. 64) during the interviews, mostly to remind myself of questions or points to pursue further, and to highlight specific details on which I wished to reflect following the interview. Just as with my observation fieldnotes, I typed up a more extensive version of my initial working notes after the conversation, marking particular quotes, ideas, or descriptions that seemed especially relevant or somehow striking. Once all interviews were completed, they were transcribed in full by a transcription service. I then reviewed them for accuracy and made corrections as needed.

Document and Artifact Review

I collected numerous documents and artifacts over the course of my research. These materials further stretched my understanding of how Greenfield was constructed and animated, as well as provided clarification and depth to my knowledge of the model's design. In addition, they served as a valuable point of triangulation with my observations and interviews, allowing me to "corroborate and augment evidence from other sources" (Yin, 2003, p. 87) and, at times, contradicting previous data and therefore helping me define problems to pursue through further inquiry. The documents and artifacts I collected and examined included, among others: Greenfield planning and design artifacts; curriculum documents (e.g., unit and lesson plans, assessments and other academic tasks, self-directed learning modules, etc.); student work samples; PD materials; staff survey data; student academic data (e.g., internal math and English Language Arts interim assessments, STEP literacy assessment, unit tests and weekly quizzes, etc.); family communication materials; and school event programs. Some of these artifacts were in hard copy; many were digital, particularly those used by the design team. Greenfield players at the school and network levels were generous with these artifacts, sharing nearly everything I requested hard copies of or to which I sought digital access.

In order to be methodical about my use of documents and artifacts, I generally collected or requested access to any materials that accompanied an activity I observed. This allowed me to "follow along" with the participants in the activity, and gave me a physical artifact to refer back to during later data collection and, subsequently, data analysis. After an initial review of each document, I systematically labeled and filed it, and added a note about it to that observation's fieldnotes so that the sources were linked. This system ensured strong organization and easy access.

Table 3.1: Sources of Evidence by Research Question

	RQ1: What approaches do education leaders use to construct such models?	RQ2: What are the central components of these models?	RQ3: How do leaders and teachers animate these models in practice?	RQ4: What complicates these efforts?
Observations: Classrooms and School		X	X	X
Observations: School-Wide Events and Activities		X		X
Observations: Expeditions		X	X	X
Observations: Staff and Teacher Meetings			X	X
Observations: Professional Development Sessions	X	X	X	X
Observations: Design Team Meetings	X	X	X	X
Interviews: Greenfield Network-Level Leaders and Designers	X	X	X	X
Interviews: Greenfield School Leaders	X	X	X	X
Interviews: Greenfield Teachers	X	X	X	X
Document and Artifact Review	X	X	X	X
Part-Time Work		X	X	X

Part-Time Work

A final source of data was my role as a part-time curriculum designer for the Greenfield Project. I began this role in the fall of 2015, nearly a year-and-a-half prior to beginning dissertation research, and continued throughout and beyond the duration of the study, always on a limited, part-time basis. My work focused solely on K-2 curriculum, and included design for humanities, science, and self-directed learning. I provided light curriculum implementation support, occasionally observing specific lessons in action, examining student work and assessments, and meeting with K-2 teachers, school leaders, and design team leaders to share feedback and refine the curriculum. This position allowed me to further immerse myself in the inner workings of the Greenfield Project as a full participant, and thereby equipped me with a trace of "insider status." As useful, I leveraged my fieldnotes to record relevant information and impressions from this experience.

Data Analysis

As is typical of qualitative research, my data collection and analysis followed a layered, iterative process (Hesse-Biber & Leavy, 2011). Initial analysis occurred in concert and functioned interactively with data collection, one informing the other. Once the bulk of data collection was complete, I dug into deeper layers of analysis. This process began with close reading of fieldnotes and interview transcripts as a whole data set, thereby allowing me to see the full scope of the study with fresh eyes and begin to discern patterns and make logical comparisons (Emerson et al., 2011). Next, I continued with close reading of my earlier reflective memos (those written during data collection), followed by close examination of the documents and artifacts I had collected. During this process, I wrote additional memos, both reflective and analytic in nature, to serve as adhesive among these layers.

At this juncture, I transitioned to systematic analysis of interviews. Using principles of grounded theory, my analysis stayed close to the data, with analytic codes and categories "developed from the data, not from preconceived hypotheses" (Charmaz, 2004, p. 497). I used "open" coding to create descriptive and interpretive codes and sub-codes, then segued to "focused" coding to develop more conceptual and thematic codes (Charmaz, 2004; Emerson et al., 2011). (I used a similar process to selectively code fieldnotes.) I maintained my practice of memo writing, integrating the themes and ideas that surfaced from this round of analysis to help clarify and connect earlier ideas.

Although my approach was largely inductive, in that I analyzed the interviews "with an open attitude, seeking what emerges as important and of interest from the text" (Seidman, 1998, p. 100), it was not exclusively so. It is important to acknowledge that fieldnotes themselves are "interpretations or representations that follow from the purposes and working theories of the researchers" (Kourtizin, 2002, p. 120), as well as recognize that "analysis pervades all phases of the research" (Emerson et al., 2011, p. 173) and that a researcher inevitably has "theoretical commitments" (p. 198). This was reflected, for example, in my codes, which relied on a combination of etic language (external language from existing literature and theory) and emic language (internal language from the participants themselves) (Dyson & Genishi, 2005). My analysis was, then, unavoidably both inductive and deductive.

Validity

In qualitative research, particularly that which employs ethnographic methods, validity is framed not as a specific goal of achieving truth, but rather as a process of building credibility (Hesse-Biber & Leavy, 2011). Developing such "trustworthiness" (p. 48) necessitates identifying and managing "threats to validity" (p. 48). In this study, those threats – common to

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most qualitative work – included researcher bias, sampling bias, and participant reactivity. I

address these biases below.

Researcher Bias

Researcher bias is an inherent part of ethnographic work. Peshkin (1988) writes,

"[O]ne's subjectivity is like a garment that cannot be removed" (p. 17). Indeed, it would have

been impossible for me to shed the experiences and values I carried into this study, or to alter my

positionality as a researcher. I could, however, "enable myself to manage it – to preclude it from

being unwittingly burdensome – as I progress[ed] through collecting, analyzing, and writing up

my data" (p. 20). Through a process of "continuous re-examination and reflection" (Kourtizin,

2002, p. 133), I considered: the type of data I collected and *how* I collected it; my positionality

within this research; the epistemology on which I relied to make sense of my data; the way I

chose to write about the data; and the implications embedded in these choices. Through the

constancy of this reflexivity, I endeavored to approach data collection and analysis with an open

mind, and to consciously work toward accurate and ethical representation of participants' voices

and of AF's Greenfield Project overall.

Sampling Bias

Purposive sampling was a logical fit for this study, yet this strategy has potential for bias.

There were certain key players in the Greenfield Project, such as particular school and network-

level leaders and designers, whose perspectives seemed critical to adequately understanding this

work. In other cases, there were specific roles or categories of stakeholders whose voices were

critical, but I faced choices about which of those individuals to interview. Although I made

every effort to be strategic yet even-handed in my sampling, it is possible that my choices could

have been either more strategic or more representative. Nonetheless, I was careful to determine

precise criteria for interviewees (as described above), and then seek only participants who seemed a good fit for that criteria, as well as a good fit within the larger group of participants (i.e., yielding the desired mix of participants). I did not, for instance, necessarily interview Greenfield actors who volunteered to participate or expressed overt interest in the study, nor did I shy away from actors who seemed disinterested in my research. Moreover, I was patient in waiting to recruit participants until months into the study, primarily so that I could be fair and strategic with my sampling rather than allow early impressions and ideas sway me.

Participant Reactivity

At no time in this study was my identity as a researcher concealed. To the contrary, at the outset of data collection and prior to PD sessions and meetings with players whom I had not met, I made a point of briefly introducing myself and my research. (This was voluntary, but Greenfield players consistently allocated space and expressed appreciation for these introductions.) Thus, there was opportunity for participant reactivity, especially during my extensive observations. During direct observation, for instance, the activity or discourse might "proceed differently because it is being observed" (Yin, 2003, p. 86). A similar problem might surface during participant observation, along with the possibility of bias "due to [the] investigator's manipulation of events" (p. 86). To counter such bias, I relied in part on the reflexivity mentioned previously, and in part on the comprehensiveness – both depth and duration – of the study. The extensiveness of my observations was itself a tool to minimize participant reactivity, because it afforded increasing comfort with my presence in classrooms, meetings, and such. The fact that I was always, as a Greenfield actor joked, "lurking," meant that my presence as a direct observer became unobtrusive, and as a participant observer I was, for the most part, seamlessly integrated into the group.

Triangulation

Triangulation was a crosscutting means of addressing all three of the aforementioned biases, and of strengthening the validity of this research. Yin (2003) writes, "[T]he case study's unique strength is its ability to deal with a full variety of evidence – documents, artifacts, interviews, and observations" (p. 8). Thus, triangulation is solidly embedded in case study design, and it is incumbent upon the researcher to leverage these multiple types of evidence to develop "converging lines of inquiry" (p. 98). Throughout my research, I attempted to corroborate the emerging themes in my analysis by triangulating data derived from multiple methods, multiple sources, and multiple participants. I also investigated negative cases, examining a range of data to pursue "alternative explanations" (p. 137) for my findings until resolved. To complement this triangulation, I engaged in member checking, in which data was "'played back' to the informant[s] to check for perceived accuracy and reactions" (Cho & Trent, 2006, p. 322). This helped to further gauge and reinforce the validity of my findings.

Limitations

Despite prudent design and thoughtful execution, this study inevitably had limitations. Here, I unpack these limitations, explain their potential impact, and note how I addressed them, when possible.

Researcher Role

My researcher role in this case study was unique. I was *doing* the Greenfield work as a curriculum designer while also a student of the work as a researcher. Because I was both internal to the work (albeit on a part-time basis) as a designer and external to the work as a researcher, my vantage point was unusual, rich with opportunity as well as occasionally fraught with additional decisions, concerns, and complications.

This dual role, one could argue, left room for conflicting priorities, for clouding the "objectivity" of my observations (it is highly questionable, of course, whether such objectivity is even possible or desirable in qualitative research of this sort [Peshkin, 1988]), and for influencing my interpretations. Yet I took pains to separate my curriculum work from my research to the extent possible, which was not as difficult as one might expect given the very part-time nature of my design work at the time, much of which took place remotely. I tried to be fully transparent with colleagues about whether I was wearing my "designer hat" or "research hat" when engaging in Greenfield-related work (it was almost always the latter, as I was working solely on kindergarten and first grade science curriculum during nearly the entirety of the data collection period, and therefore my observations and interactions regarding curriculum work were quite limited), while recognizing that it would be impossible to fully separate the two. In addition, I strove to engage in the type of continuous reflexivity described above, pushing myself to parse out, when needed and when possible, how my design role could be affecting my research role, and vice-versa. I made sure that those with whom I was working on curriculum design were aware of my dual role, felt comfortable with it, and expressed no sense of conflicting priorities. Finally, I was mindful of the fact that, given the type of ethnographic research in which I was engaged – one focused on lived experiences and "how"-type questions rather than specific outcomes or quantitative measures – there was minimal risk of my design work strongly influencing the direction of the research, or of the Greenfield Project itself. Thus, I saw these researcher and designer interests not as conflicting, but as complementary and aligned.

Nonetheless, this dual and sometimes fluid role could and did complicate my research. For example, some teachers and leaders simply accepted my presence in their classrooms or PD

sessions and allowed me to "behave like rather shy friends who speak seldom and write often" (Dyson & Genishi, 2005, p. 58) – the part I typically played. Others, however, were (understandably) eager to hear my findings and feedback, often requesting one or the other at the conclusion of an observation or an interview or conversation. While this might have been solely the byproduct of doing immersive, ethnographic research, I suspect it was partly due to my partial insider status as a part-time member of the Greenfield team. As much as I wanted my research to be useful to Greenfield actors and wished to reciprocate their extraordinary generosity for hosting me for over 13 months (to say nothing of maintaining positive relationships and having the opportunity to continue my design work), I felt it would be a disservice to share immediate findings before engaging in deep data analysis, or to give feedback when my role was deliberately non-evaluative. I did my best to explain this rationale – while assuring Greenfield players I would share my findings once ready – and did agree to "play back" some of what I observed. Often these "noticings" proved useful in themselves, and I found Greenfield actors generally understanding of my desire to wait before sharing more formal findings and interpretations. This type of complication, then, though present and real, did not seem detrimental or insurmountable.

Timing

A second potential limitation of this study was its timing, both the point at which I chose to examine the Greenfield Project and the duration of the study. By some measures, this point in AF's innovation journey was an especially ripe moment: the model had just completed its first year of full-school (K-6) implementation yet was still evolving, with its future optimistic even if somewhat unclear. From another perspective, however, it might have been more valuable to study the work earlier, perhaps in its initiation and construction stages, or during early pilots or

year one of full-school implementation. Adjusting the timing of the study – the point of access –

would have shifted the focus of the study. It would have enabled greater understanding of those

early phases of constructing, developing, and animating a new model, as well as enabling a

different type of insight, with more immediacy and rawness, into the process of converting an

existing school and the experience of that transition.

In a similar vein, adjusting the duration of the study – the length of access – might have

altered not only the focus, but also the findings themselves. Upon concluding data collection, I

stepped back and realized that I could easily continue this study for years. There was so much

still to learn and understand about AF's Greenfield efforts, and so much data I could continue to

gather in response to my guiding research questions. My 13 months of ethnographic study, deep

and immersive as they were, only provided a snapshot of AF's innovation journey with

Greenfield. In my analysis and reporting of the findings, I tried to be clear about this limitation,

acknowledging that I had direct knowledge only of this 13-month time period (and, through, my

design work, some direct knowledge of the periods immediately preceding and following). I

could not, therefore, make assumptions or predictions about what might transpire for Greenfield

down the road, nor what the implications of that road might be for Greenfield stakeholders and

for others in the field hoping to learn from this work.

Generalizability

This brings me to a third and final limitation, one common to qualitative research: the

absence of "statistical generalization" (Yin, 2003. This case study was, as the name denotes,

specific to the contexts of this case. It was a deep dive into one education system's approach to

innovation, at a particular time, in a particular environment. The study was never intended to be

representative of or necessarily useful to all school systems, nor all low-income schools or

charter systems, nor other schools or systems aiming to innovate on their model. Moreover, although I discuss alternative approaches to school innovation and improvement in Chapter VII, this study was never meant to be a comparison between different school improvement pathways.

This research was, however, intended to have "analytic generalizability" (Hesse-Biber & Leavy, 2011).   Through prudent study design, conscientious data collection, deep layers of methodical data analysis, and use of "thick description" (Geertz, 1973), I aimed to produce a study that might enable transferability across similar cases and contexts with high levels of "fittingness" (Lincoln & Guba, 2000). I hoped, via this approach, that this research might be of value in "generating meaning and creating understanding" (Hesse-Biber & Leavy, 2011, p. 264) for others engaged in this type of school innovation and improvement work. Yet I was fully cognizant that, because qualitative research – and case study design, in particular – is inherently a "situated activity" (Denzin & Lincoln, 2011, p. 3), the findings from this dissertation would have definite limits in their generalizability.

Conclusion

In the three chapters that follow, I unpack the findings generated by this study. I devote one chapter apiece to the initial three research questions, and address the questions sequentially. In each chapter, I first sharing the findings that respond to that question, and then step back to analyze those findings through the lens of the fourth crosscutting question, *What complicates these efforts?* In this manner, I begin to reveal key themes that emerged across the study, and across the phases of AF's Greenfield Project.

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CHAPTER IV

Findings: Initiating and Constructing the Model

Education leaders today face pressure to devise comprehensive, whole school models capable of transforming traditional, "status quo" schools into schools that support ambitious teaching and learning for all students. As described in my literature review, there are several challenges with this charge. First, school design work of this sort lacks a highly developed, practical knowledge base. Second, professional preparation for such work falls outside the scope of most conventional education leadership programs. Third, traditional, "status quo" instruction is deeply ingrained in most American schools – and in the teachers and leaders who staff them – thereby requiring a dramatic shift for which there is little precedent. Fourth, few schools or school systems have the coherent educational infrastructure that would enable such transformation. Given these challenges, my first research question asks: *What approaches do education leaders use to construct such models?* A complementary research question, which cuts across all three findings chapters, asks: *What complicates these efforts?*

In the case of Achievement First's (AF) Greenfield Project, the approach to constructing a new model had three key dimensions. The first focused on generating fresh ideas using design thinking, with the aim of truly starting with a blank slate. The second dimension leveraged early model implementation to flesh out the school's design. The third and final dimension involved the ways in which leaders and designers leaned on elements of AF's "playbook" for the

organization, management, and content of school, often unwittingly using this playbook to further shape the new model. These dimensions comprised an approach to constructing something novel that was complicated by three primary factors: the inherited understandings that Greenfield actors brought with them, the complexity and uncertainty of innovative work and the resulting learning imperative for the organization, and the challenges of grappling with that imperative through deeply ingrained modes of learning.

In this chapter, I begin by establishing the context and motivations for AF's Greenfield Project. I continue by tackling this study's first research question and developing the three dimensions of AF's approach to constructing the Greenfield model. I conclude by reflecting on AF's ambition in constructing this model in light of its approach, and examining the factors that complicated these efforts. Through this process, I begin to surface a central theme that ultimately stretches across much of this dissertation: Attempts at novelty are bound by individuals' and organizations' inherited understandings.

Context: Achievement First's Greenfield Project

Achievement First provides a strong case for examining approaches used by education leaders to construct a comprehensive, novel school model absent precedent. As detailed in Chapter III, at the time AF began to consider a new school model (eventually known as the Greenfield Project or Greenfield schools), it had already accomplished a great deal in the charter sector. AF was a charter management organization (CMO) known for impressive results – as measured by standardized tests and college acceptance rates – with primarily low-income students of color across more than 30 schools. It had developed and continuously refined a clearly articulated and systematic approach to starting and managing high-quality public charter schools in high-poverty communities in cities in the Northeast. AF knew a great deal about

operating successful, "no excuses" charter schools and about the educational infrastructure required to support the core work of teaching and learning in such schools. Yet despite its considerable accomplishments, the network was humble, always seeking to improve, and driven to helping its students achieve at the highest levels.

One might suggest that, because of its success, knowledge, and infrastructure, AF's initiative to construct a new school model makes a poor choice for a case study to explore this type of work. Its accomplishments and organizational depth, a critic might say, make the CMO too much of an anomaly in the field or too firmly established. Few high-poverty schools or school systems have such a record of achievement or such capacity for improvement. AF's context is too unique, and therefore whatever steps it took toward innovation and improvement, and whatever takeaways and knowledge the experience generated, could not be applied elsewhere.

I disagree. AF presents an intriguing case of an approach to constructing a new school model largely *because* it was a high-performing, well-established education system. The organization's resources, knowledge, and experience did not render it immune from problems or failure. To the contrary, AF had to cope with environmental pressures, internal unrest, and financial concerns, just as any school system does. Moreover, the CMO's record of success and market position made dramatic change especially risky, and its established nature made dramatic change particularly challenging. There was a great deal for AF to lose in this proposition, and enormous pressure to succeed.

Achievement First's approach to constructing a novel school model therefore represents an unusually compelling case. On the one hand, AF's circumstances were familiar and relatable in the sense that many low-income school systems, high-performing or not, feel urgency to

change and quickly succeed in response to internal and external pressures, and are tasked with doing so in firmly established, often-constrained contexts. On the other hand, AF's case was atypical in that, at the time of this writing, few, if any, "no excuses" schools or systems had decided to overhaul their model in an effort to support deeper learning for all students. For that matter, few schools or school systems of *any type* that had achieved AF's level of success (at scale) had even demonstrated interest in such dramatic innovation. The type of change AF embarked on with its new school model was an ambitious departure from its traditional school design, and a rare and rather remarkable move for an established and high-performing school system. We stand to learn a great deal from studying AF's experiences, especially the dilemmas and challenges it faced, in pursuit of dramatic change.

Greenfield's Motivation

In the following section, I examine the motivation behind AF's decision to construct a novel school model. I describe the external and internal pressures AF faced – pressures similar to those faced by other high-poverty school systems – and explain how each one shaped AF's approach to developing a new model. I find that environmental factors, namely the Common Core State Standards (CCSS) and AF's college success rate among its alumni, were leading catalysts for AF's development of the Greenfield schools. My analysis also suggests that internal factors, such as a strong desire to respond to shortcomings of AF's traditional model, and unrest regarding AF's management of staff sustainability and issues of equity, also contributed to the decision to innovate. Each of these factors was significant in itself and, in conjunction with one another, sufficiently powerful to engender plans for a new school model.

The environment. Since AF's founding as a CMO in 2003, the environment played a critical role in the vision and day-to-day operations of its schools. In its determination to provide

educational opportunities for children that would yield high academic performance, AF relied

heavily on two measures – standardized test results and college success metrics (college

acceptance, matriculation, GPA, and graduation) – as proxies for its success. Like many high-

poverty school systems working to improve student achievement since the No Child Left Behind

Act (2001), AF focused almost exclusively on these quantifiable outcomes. As the network's

name indicates, AF was unapologetic about this focus. The organization was born in response to

the systemic inequities mitigating educational opportunity and access, and the subsequent lack of

academic achievement, within low-income communities; in other words, AF was born in

response to conditions within the environment. In turn, AF's legitimacy and very existence

depended on its results as measured by the environment. Students' standardized test results and

alumni's college success mattered deeply, and any changes in environmental factors (e.g., federal

or state education policy) that impacted those quantifiable outcomes were analyzed intently and

addressed accordingly.

Common Core. One of the greatest policies to impact student achievement on

standardized state tests in Achievement First's lifetime was the Common Core. The Standards

were adopted in 2010 by the states that now house all three AF regions – New York,

Connecticut, and Rhode Island (Common Core State Standards Initiative, n.d.). Although these

states did not fully implement the Standards until the 2013-2014 school year, they began

introducing elements of the Standards prior to that time, and began introducing Common Core-

aligned state tests. For example, New York first used Common Core-aligned state tests for both

math and English Language Arts in the spring of 2013 (Office of State Assessment, n.d.). With

the new tests, states intended to push for deeper conceptual understanding, more critical thinking

and problem solving, and increased opportunities for students to show and justify their thinking.

The shifts in focus and format were felt and reflected in students' results across states and districts: test scores plummeted (e.g., Hernández & Gebeloff, 2013).

Achievement First was no exception to the impact of CCSS on students' state test scores. The CMO's results, previously strong across regions, fell precipitously. On average, AF experienced a 30 percent-point drop on the ELA state tests and a 40 percent-point drop on the math state test (Achievement First School Leader Summit Presentation, March 2018). For an organization accustomed to its hard work – the hard work of its students, families, teachers, leaders, and staff – yielding consistent success on state tests, these results were hard to digest. Furthermore, because state test scores were one of the primary mechanisms by which AF measured its success, and by which it was evaluated by many external parties, the blow was exacerbated.

Perhaps most difficult was that AF, which had touted its students' impressive state test results and its steady gains toward closing achievement gaps on such tests, suddenly realized it was falling far short of its promise to students. As one interviewee said,

> It was brutal… *We crashed*. I mean, we went from thinking, by the old measures, that we had also closed the achievement gap, that we were doing right by 70-plus percent of our kids – almost 80 percent. Then realizing: no. Our average proficiency crashed to 37 percent. I mean, it was horrible… We thought it [the CCSS-aligned state test] was a more honest measure. That's what made it so horrible. It was actually a better proxy for college and career readiness. (Interview 8)

This failure was brutal because AF cared deeply about its students and about its mission of equal educational opportunity – resulting in high achievement – for all children. These state test scores illuminated critical gaps in AF's approach to delivering on its mission.

Rather than blame the new state tests or write them off as weak or unfair measures, the organization confronted its results head-on. AF used this moment as an opportunity for reflection and reckoning, and considered it a wake-up call. Network leaders took a hard look at

AF's curriculum and approach to teaching and learning. They realized they needed to make significant changes so that students would have the conceptual understanding and critical thinking skills necessary to achieve on CCSS-aligned tests – and for achievement beyond the boundaries of those tests.

College success. At about the same time AF was getting the first round of results from CCSS-aligned state tests, it received similarly sobering data from its alumni. AF's early cohorts had college graduation rates in the mid-30 percent range and, as of this writing, the most recent cohorts were just above 50 percent. Although these rates far outpaced the 9 percent average graduation rate seen among low-income students, they fell considerably short of the organization's target benchmark of 77 percent – the average graduation rate for students from the highest income quartile (Achievement First, 2018). In addition, students' college GPAs were low – typically half of students had a 2.5 or below – and such numbers were unlikely to unlock graduate school and career opportunities, among other concerns. These graduation results poured salt on the wounds inflicted by Common Core.

Once again, AF found itself surprised by weak outcomes. One interviewee remembered the collective dismay:

> It's like we really thought we were doing such good work. We thought we had it, right? We've discovered how to help kids. They're going to be successful. These kids are going to college. Guess what? They weren't successful. They didn't graduate from college. What we're doing, it might work in certain aspects, but there's this whole other thing we're missing. (Interview 5)

AF teachers, leaders, and staff realized they were far from the college graduation bar they had set for themselves, and that in itself was discouraging. Furthermore, the data showed that AF's actual approach to teaching and learning might be part of the culprit. It became apparent that hitting the desired graduation benchmarks would not be a matter of simply staying the course

and working harder; it also would be a matter of working differently. The combination of disappointing Common Core data *and* unsatisfactory college graduation data made people take pause and, especially in the "higher realms" of the organization, ask, "[I]s our direction and our path… what's best for kids in the long run…? Not just in the short term… [or] even just K-12, but is this going to set them up for success in their future lives?" (Interview 1). The evidence indicated that it would not.

This was another wake-up call for the CMO, and added to its time of reckoning. Similar to the organization-wide impact of results on the CCSS-aligned tests, this was an "equally more challenging, soul searching, almost start-over kind of moment" (Interview 8). Again, network personnel rolled up their sleeves and began trying to figure out what was holding its alumni back. After thorough reflection and internal probing, analysis of alumni college data, and examination of feedback from its first-generation college students, several themes began to emerge. First, first-generation college students reported struggles with time management and goal-setting in college, largely because both had been done for them in an incredibly comprehensive way throughout their time at AF. Second, students needed to be able to manage and respond to teacher feedback more effectively, and they wanted stronger mentoring relationships with teachers in middle and high school. Third, AF alumni spoke to a general lack of investment in and ownership over their education, which then caught up to them in college.

AF learned a great deal from these data about how and why many of its students floundered in college, and the organization used this information to inform next steps in pursuing its college graduation goals. When considering what to change in response to this college persistence data, AF leaders acknowledged, "[I]t didn't feel like incremental movement would get us where we needed to go" (Interview 8). The CMO had made incremental changes since its

very beginning – it was an organization that hungrily and continuously sought to improve – but clearly the changes were insufficient. Bigger and bolder change was now required.

> We needed to figure it [college success] out in a holistic way, because I think as we just started peeling back the layers of the onion of student investment and ownership, it's not just a, "Oh, well, let's just put this program into place," or "Oh, we think if we just make this small shift in teacher professional development, it's going to be the game changer." We knew we needed to think about it in a much broader sense, and we needed input from lots of different stakeholders. (Interview 3)

With this acknowledgement, AF determined that it needed to move forward on two fronts to respond to these critical external challenges. The organization decided to make significant changes to its existing school model (AF Classic) while also beginning to develop a new school model: Greenfield.

Internal unrest. The dual pressures AF felt from the environment – Common Core and college success – were compounded by pressures from within the organization. My findings showed an increasing internal desire to respond to shortcomings, perceived or actual, within the AF Classic model, and a desire for AF as an organization to "do better" by its students and families. There also was building momentum to confront issues of equity within the organization and its approach to schooling, as well as a push for AF to continue to be at the forefront of urban education systems in its approach to various facets of schooling (e.g., rigorous curriculum, comprehensive teacher and leader support, systematic school operations and management). In addition, there was a nagging concern about staff sustainability that had long plagued AF, as it did other "no excuses" schools, particularly "no excuses" CMOs. I elaborate on each of these internal factors below, and illustrate how they combined with powerful external factors to spark AF's interest in developing a novel school model.

Response to shortcomings. For some AF actors, the Greenfield Project was seen as a chance to do things they had not had an opportunity to do within the AF Classic model, or a

chance to improve aspects of the AF Classic model they had never been able to truly "get right."

(Note that, although I address the motivating factor of AF's shortcomings separately from the

Common Core and college success factors, they are, in many ways, intertwined. Certain

limitations or weaknesses of the AF Classic model were thought to be at least partly responsible

for falling test scores and lagging graduation rates. Thus, these motivating factors were not

discrete, but I address them as such to ensure clarity.) For example, some members of the

Greenfield Project felt that "developing student character" was shortchanged in the Classic

model, and therefore part of the drive to start Greenfield. Other members felt that AF Classic

gave short shrift to building the types of "soft skills" (e.g., study habits, goal-setting, executive

functioning skills) necessary for student success in college and beyond. One interviewee

explained:

> I feel like we weren't hitting the mark with building kids' ability to build habits that are
> beyond just hitting the mastery goal. Like how to… really persist in challenge, how to set
> goals for themselves, how to achieve those goals. We just weren't doing that.
> (Interview 2)

Greenfield, then, was perceived as a way to cultivate these soft skills and thereby correct AF

Classic's shortcomings in this area and others.

Do better. Along the lines of responding to AF Classic shortcomings, Greenfield leaders,

designers, and teachers often spoke of a critical but less defined sub-factor that motivated

Greenfield: a chance to simply do better. When AF made the decision in 2013 to develop a new

model, the CMO had existed for a decade, and its flagship school for 14 years. Although, as

mentioned previously, the organization had achieved considerable success, there was a sense that

it could do better by its students and families, certainly in terms of academic success as measured

by standardized tests and college graduation, but also in ways that were less tangible. For

instance, AF actors wondered if they could make school more joyful and engaging for students,

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ignite students' passions in ways that the AF Classic model was not structured to do, and create a culture where students took greater ownership of their learning and were intrinsically motivated to succeed. AF wanted to keep its focus on academic achievement – and raise the bar for achievement even further – while explicitly and more effectively addressing other areas of students' development, thereby improving its education package from multiple angles. As one interviewee reflected, "[P]art of what Greenfield was meant to do was to give us a chance to usher our own model into the next level around those types of things" (Interview 13).

Equity. A push to increase educational equity, though perhaps only an implicit driver of the Greenfield work, was a common underlying thread in my data. There was a feeling that a new school model such as Greenfield could and should be a mechanism by which AF might increase equity in public education. As an organization, AF had been built on a deep belief in equal educational opportunity for all children, and already had made a name for itself as a CMO capable of closing and even reversing achievement gaps at scale. Greenfield was seen by some as a chance to further this vision, and make even greater gains in attaining equitable outcomes for its students.

For instance, from the get-go, Greenfield leaders and designers placed a premium on enrichment (non-academic subjects such as dance, sports, drama, band, and robotics and coding) in the new school model. While other high-poverty schools and school systems, and those serving predominantly Black and Brown students, were cutting enrichment, AF was proud to be doubling down on its investment, and proud not because of appearances but because of what these opportunities could do for its children. The goal was to build a "world-class arts, sports, and computer science program for Greenfield scholars" (Fieldnotes, June 2017). The Greenfield model incorporated two enrichment periods a day, and leaders and designers worked to design a

program and hire and support enrichment teachers to provide high quality enrichment opportunities for its students. It was not lost on Greenfield stakeholders that this investment in enrichment was atypical of high-poverty school systems, and a chance to right a pervasive and unfair wrong.

Staff sustainability. Staff sustainability was another motivating factor behind Greenfield, albeit also an implicit one. Like many "no excuses" CMOs, AF had long struggled with teacher and leader attrition, often due to the scope, intensity, and time-consuming nature of the organization's approach to teaching and leading. Although AF acknowledged its relatively high attrition rates (these rates, however, were fairly low next to AF's peer CMOs), professed a strong commitment to improving its employees' work-life balance, and had seen progress in these areas, the upward trend was slow. My research surfaced a hope among some AF players that, by starting a new school model and playing around with the very structure of school, there might be a way to increase teacher and leader sustainability and retention. Given AF's extended day for students (7:15am to 4:00pm), for example, perhaps Greenfield designers could slightly stagger teacher and staff schedules. Or during the two-week Greenfield expeditions held three times annually, perhaps teachers could have a rotating coverage schedule that permitted additional planning time or professional development (PD). By revisiting something as basic yet instrumental as teachers' schedules, Greenfield was, again, seen by various actors as an opportunity to do better.

At the forefront. One final, though subtle and perhaps even controversial, motivating factor behind Greenfield was a desire to be at the forefront of the next wave in school reform. As discussed later in this paper, Greenfield actors had a range of perspectives regarding how innovative Greenfield actually was as a school model. Yet regardless of their perception of the

model's degree of innovation, some research participants felt that, by even taking on the Greenfield Project, AF was taking a stance. One interviewee, when asked why AF decided to innovate on multiple aspects of its school design with Greenfield, said,

> I think because we want to—we truly want to try things and be on the forefront. I think we want to be on the forefront of what we see to be the next step or evolution in education, and so we—and we want to do it in a lot of different areas, right? We want to do it in math and in science and… I think that was a lot of the initial Greenfield stuff is: let's blow it all up, right, because we want to do everything better than what we've done before. (Interview 15)

To be clear, this interviewee did not imply that the motivation behind Greenfield was simply to "blow up" schooling as AF knew it. To the contrary, there were large, explicit motivating factors – particularly the environmental factors – behind starting a new school model. But, per the interview excerpt above, there was evidence that AF specifically wanted Greenfield to be an example of cutting edge work in public education.

Other interviewees shied away from the label "innovative" and resisted any implication that, with the Greenfield Project, AF was taking an intentional stance as an innovative organization. There was concern that this might indicate a desire to be faddish, which was hardly the purpose of Greenfield. One member of the Greenfield Project emphasized that, as an organization, AF would much rather be thought of as "highly effective" than "highly innovative" (Interview 21). For this participant and others, if the label "innovative" was a byproduct of the Greenfield work, that was fine, but AF was uninterested in innovation for innovation's sake. Nevertheless, the idea held that a desire to be at the forefront of education was one of multiple motivating factors behind Greenfield.

In light of these motivating factors, it is clear that there was nothing arbitrary about AF's decision to develop a novel school model, and to try something bold with Greenfield. There was nothing theoretical about the idea that AF Classic, a successful school model by most measures,

was, nonetheless, not cutting it for AF's students. Moreover, there was no yearning for innovation merely in order to be innovative. One participant put it bluntly: "That's kind of where Greenfield started. We were like, 'Shit. Our very best is still not academically strong enough or student invested enough'" (Interview 21). Consequently, AF asked itself, "Well, what's a new way of doing school?" (Interview 4).

Approaches to Constructing a New School Model

There were multiple dimensions to Achievement First's development of "a new way of doing school." Although AF identified five distinct, chronological phases for the development of the Greenfield model (see Figure 4.1), my analysis suggests that AF's approach to constructing a novel school model was not so clearly defined nor neatly sequenced. This was due in part to the inherently iterative, uncertain, and complex nature of such a process, and in part to the range of factors that precipitated Greenfield in the first place. Given this complexity, I have divided AF's approach into three dimensions that more precisely capture the "how" of its work. With the first dimension, AF aimed to use unfettered, "greenfield" design thinking (hence the project's name, Greenfield), and incorporated the perspectives of external consultants and internal stakeholders, as well as a range of research, toward that goal. The second dimension used early model implementation to elaborate upon Greenfield's initial blueprint and refine the model's design. The third dimension encompassed the ways in which Greenfield players capitalized on AF's playbook for schooling – knowingly and unknowingly – to further shape the Greenfield model. I unpack each of these dimensions in the sections that follow.

Figure 4.1: Model Development: The Process[4]

Phase 1 (January 2014 - July 2014)	• Brainstorm, research, design initial blueprint (with IDEO)
Phase 2 (August 2014 – July 2015)	• Prototype, small pilots, evolve and build model components
Phase 3 (August 2015 – July 2016)	• Large scale pilots and model iteration at K, 5th & 6th at Elm City
Phase 4 (August 2016 – July 2017)	• Expand model at Elm City to K-6, continue to iterate
Phase 5 (August 2017 –)	• Expand model to other AF schools, continue to iterate

Dimension 1: Generate Fresh Ideas

"If you could design the best school in the world, what would it have in it?" (Interview 8). This question guided the first dimension of AF's approach to constructing a novel school model. To answer it, AF committed – to the best of people's abilities – to picturing a green field, a blank slate, for schooling. Actors wondered what might be possible for a school model and for schooling, period. They asked themselves, deliberately openly and broadly, what school might look like if they could build any school on this green field and design it however they wanted.

Everything was on the table. Participants considered the school day and school year, classroom layout, desired outcomes of schooling and possible routes for achieving these outcomes, and criteria that would inform the very essence of the school experience for students, families, teachers, and staff. In the early planning months, actors were pushed not to take for

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[4] Adapted from "Greenfield new teacher training: Greenfield overview," by Achievement First/ Greenfield Schools, July 2017.

granted anything that traditional schools already did, or that AF itself did. As one interviewee

recalled: "[T]he commanders' intent was not to be constrained by anything we currently do, and

only continue doing it if it is in service of the broader vision" (Interview 24). Another

interviewee chuckled as he remembered the freedom of this process:

> In the initial stages, it was very open-ended… it was just like, "We're designing a new
> kind of school model. Let's just talk about it." I will never forget… we all got Post-its…
> I just remember a person went like, "Trips to tropical islands." Then this guy came back
> with, "Yes. Put it up!" Right? *[Laughing]* I was just like, "What is this?" I expected
> someone to roll through in a Segway. I was like, "What is happening?" *[Laughing]*
> There was that… just wide-open input, then the kind of future sessions they narrowed
> and got more realistic. (Interview 3)

The rationale behind this approach was to proceed completely untethered so that nothing

felt off-limits, and ideas could truly be fresh. Based on the CMO's data and the scope and

strength of the motivating factors behind the Greenfield Project, there was a feeling that this new

design had to differ significantly from the current AF Classic model. As one participant

articulated, "I think what Common Core [test data] made me realize was like, 'Oh, no. We're

not a little bit off here. We're *really* off.' We need to think. We need a new model" (Interview

8). The only way to get dramatically different results, AF concluded, was to create a

dramatically different model, and this required "greenfield" thinking.

Consultants. In order to think about this new model in a new way, AF reasoned that it

needed outside support. One participant remembered that those leading the charge behind this

initiative "knew enough to know that if AF went at this alone without help… there was a serious

risk we might not be bold enough, or fresh enough. Maybe the right word: innovative enough"

(Interview 8). With this in mind, AF brought in several external consultants.

To jumpstart the development process, AF partnered with the global design company

IDEO. Known for its human-centered design practices and for leveraging a design thinking

approach – and for designing Apple's first manufacturable mouse – IDEO brought creativity and

a proven track record to the Greenfield Project. The organization worked closely with AF,

walking it through a comprehensive, six-month design process. One interviewee described the

design work with IDEO:

> They basically led us through a process and multiple rounds of brainstorming. What do
> we want the first model to be? What's the problem we're trying to solve? What would the
> solution be? They were really big on end user experience. What was the end user feel?
> What would it feel like from the point of view of a student or family, which helped us
> crystallize some of the pillars that we had. What do we want the end—when we look
> back at the fully formed student, what would that look like? Then the same with our
> model elements. It goes to a process of big values and ideas to… [a] bit more practical,
> and then prototyping it and testing it. (Interview 7)

A design firm like IDEO knew what questions to ask to get participants brainstorming and

thinking about their new school design in an open-ended yet constructive manner. Additionally,

it knew how to support the resulting ideas of these brainstorming sessions, thus facilitating

discussions that took ideas from abstract to concrete, and from pie-in-the-sky to realistic.

Achievement First wanted and needed that.

In addition to IDEO, AF worked with several other long-term and short-term consultants.

Aylon Samouha and Jeff Wetzler, prior to partnering and founding the education research-and-

development organization Transcend Education, both worked with the Greenfield Project; Aylon

was the initial design lead for the project and Jeff was a design advisor. Aylon brought in other

consultants, such as Jeff Imrich, formerly of Teach for America, who eventually took over as

design lead. AF also sought the advice of well-known leaders, thinkers, and innovators in the

field of education, such as Norman Atkins, a founder of Relay Graduate School of Education and

Uncommon Schools; Diane Tavenner, co-founder and CEO of Summit Public Schools; and Alex

Hernandez, former leader of the Innovative Schools practice at the Charter School Growth Fund.

Research. In conjunction with its partnership with IDEO and other advisors, AF conducted and consulted research. Much of the conducted research consisted of visiting and talking with leaders from other schools and education organizations. As AF worked to think outside of the box, and then as ideas began to take shape, it took inspiration from schools across the country as well as internationally. When thinking through particular components of or ideas for the model, those involved in the design process often paused to ask themselves, "Who's doing this work really well?" and promptly sought out those schools or organizations.

AF aimed to learn from other schools' innovations and best practices, and then adopt or, more often, adapt those practices into the Greenfield model. For example, AF visited Summit Public Schools, based in California and Washington, to learn about their self-directed learning practices and outside-of-school learning. It later worked with Tennessee-based Valor Collegiate Schools to develop a strong social-emotional learning curriculum and aligned cultural practices. AF learned from many other schools and networks, including High Tech High, BASIS Schools, Success Academy, Uncommon Schools, Montessori for All, Acton Academy, Ron Clark Academy, and Match Next. The organization did some internal research as well – though not enough, according to some study participants – to examine schools within its own network that were excelling in particular areas from which the Greenfield Project might draw.

Aside from visiting and learning from other schools, AF also reviewed scholarship within education, as well as research and best practices in other fields. Greenfield players looked to the fields of business, brain science, social-emotional learning, and aerospace for inspiration. Their learning and inspiration from this research manifested in different ways within the Greenfield model, but each piece played a role. For instance, AF decided to shift from the REACH values, a long-time character anchor of its AF Classic schools, to the Greenfield "habits of success," in

large part because of research regarding the types of "soft skills" and habits that 21st-century students now need to be successful in college and in their career.

Internal stakeholders. A final but, nonetheless, critical, piece of picturing a green field was doing so in collaboration with internal stakeholders. AF engaged teachers, operations staff, principals, and deans in the working groups it developed to brainstorm and then pressure test elements of the model. In conjunction with IDEO, AF involved students and parents, too. As part of its focus on a user-centered experience, IDEO worked with AF to do home visits with families, talk with parent and student panels, interview AF alumni – especially those who were first-generation college students – and hold numerous one-on-one conversations with students and families. The goal of these working groups and conversations was to gain a stronger sense of key stakeholders' experiences with all aspects of AF schooling, as well as to provide authentic opportunities for input on the desired outcomes and design of the new school model.

Despite a professed desire to involve a range of perspectives in the initial design process – and despite numbers that seem to illustrate the sincerity of this desire (see Figure 4.2) – Greenfield players had mixed feelings about the extent to which AF actually listened to the input of internal stakeholders. While one interviewee remembered "getting a lot of feedback from a bunch of people" and framed the design process as "highly participatory" (Interview 4), others felt differently. A school-level actor bluntly said, "I did not feel like we were asked our feedback on the model, the initial run of the model, at all" (Interview 1). Similarly, another school-level actor recalled that, upon first hearing about the Greenfield model, it seemed that "everything we heard about was from a school in England, a TED talk, a whatever" rather than from the ideas of internal stakeholders (Interview 23). This participant pointed out that there were "phenomenal teachers" already doing impressive and innovative work at Achievement First

schools, and wondered why AF had not spent time, or more time, learning from these teachers when designing Greenfield. The participant summarized, "I think that if we studied ourselves, we'd find a lot of the answers that we're hunting around for."

It may be questionable, then, to what degree internal stakeholders actually contributed to the construction of Greenfield. Certainly the intention was to include and learn from multiple perspectives. IDEO, along with AF leaders and Greenfield designers, made sure to build into the design process structures and sessions that would invite multiple perspectives. Whether those perspectives were heard or equally valued, however, is difficult to say.

Figure 4.2: Model Development: Sources of Input and Inspiration[5]

35 Students and Parents	30 Teachers and Staff	45 Experts and Analogous	70+ Achievement First
• Home stay visits with families • Parent and student panels • 1st generation college students • AF student lunch chats • School tours led by students	• Operations • Teachers • Principals • Deans	• Education • Brain science • Aerospace • Business	• Deep dive sessions • One-on-one interviews • Direction team

Dimension 2: Leverage Early Implementation

Through the first dimension of its approach, AF determined the primary goals of its new school model, the desired outcomes, and a blueprint for how to achieve those goals and outcomes. Yet these components, AF quickly realized, only comprised the skeleton of a novel school model. Thus, the organization added a second dimension to its approach. This dimension depended on early model implementation – the day-to-day work of initial small-scale pilots, then

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[5] Adapted from "Greenfield new teacher training: Greenfield overview," by Achievement First/ Greenfield Schools, July 2017.

larger scale pilots and eventually whole-school expansion, as well as the failures, successes, and stresses of early model execution – to significantly refine and elaborate upon the design of the Greenfield model.

Working from a blueprint. Early implementation shaped the initial design of Greenfield by necessity. Although the key structures of the model were in place, such as staffing, schedule, and different learning formats (e.g., self-directed, small group, and whole group learning times, as well as expeditions), and there was a blueprint[6] that explained how these pieces fit together to achieve targeted outcomes, there was a great deal left unsaid. The curriculum was mentioned but not fleshed out in the blueprint. Certain structures were in place to promote student motivation and social-emotional learning, but the content of the structures was described only in broad strokes. Expeditions, two-week blocks of out-of-school, experiential learning interspersed throughout the year, were only outlined. In order to actually *do* Greenfield, AF had to continue the design process, but now at a more granular level.

This lack of granularity posed problems for those charged with fleshing out the design, and for those charged with executing it. For example, the initial blueprint mentioned only core academic subjects (e.g., science, humanities, math) and different modes of learning (e.g., self-directed, small group), with no reference to specifics of the curriculum regarding either content or pedagogy. As one interviewee remembered,

> When we first started we had the model and the blueprint, but we didn't know what we were going to plug into it. I think the initial assumption of that was that more of it [curriculum] would be off the shelf. We never realized we were going to have to build so much curriculum. (Interview 10)

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[6] For more information about the initial Greenfield blueprint, the result of AF's six-month partnership with IDEO and other consultants, see *Achievement First Greenfield School Design: Phase 1* (Achievement First & IDEO, 2014).

Similarly, teachers and school leaders were enthusiastic about integrating more social-emotional learning into the school, and doing so explicitly. But when it came time to actually do this type of challenging work, many people were stumped. One participant remembered thinking, "What do I do now? I'm actually not sure of where to go forward from here" (Interview 6). The same was true for new structures such as expeditions. An interviewee reflected, "There really wasn't a strong vision for expeditions… [Initial designers] saw something at Summit [Public Schools] and basically took it but didn't really deeply understand it and didn't even really map out how it would work in our organization" (Interview 13). Time and again, members of the Greenfield Project realized the initial blueprint was just that – a template, a skeleton – and they needed to use the early months of implementation to figure out what this new model and this desire for radical change would actually look like in practice.

Learning from execution. The lack of a fleshed-out blueprint meant not only that early execution would fill in multiple components of Greenfield's design, both large and small, but also that stakeholders' experiences with early execution would heavily influence design. Because AF needed to elaborate on and define so many aspects of the model, few details were firm. Thus, Greenfield's design itself was vulnerable to influence and change, and elements labeled early on as failures or successes – whether actual or perceived – played a strong role in shaping the model.

Some elements of the model were fleshed out or quickly altered based on experiences of success. The lack of definition meant that those executing the model – teachers, leaders, and operations staff – were left to try to define a lot for themselves. When something worked and seemed aligned with the overarching vision for the model, the design team and school staff did their best to capitalize on and spread that success. As one participant described it:

In the beginning, there was less of a real strategic vision and plan for execution in what it really looks like earlier on, and so it was just kind of like taking, oh, this person is doing it really well. Let's see what they're doing, and then try to get that to be replicated. (Interview 14)

For example, when dream teams (student-led conferences with parents, teachers, and other members of a student's support network) were first implemented, the Greenfield design team sketched out the structure and provided initial resources to support teachers' preparation. As teachers navigated this structure, they developed their own way to conduct the conferences. When particular teachers' dream team ideas worked – when they were successful in accomplishing the broad vision of this Greenfield element – designers and leaders made sure to share the ideas, telling other teachers, "These are things you can do" (Interview 19). Thus, dream teams began to gain definition based on what was learned from early execution.

More often than not, however, the stakeholder experiences that informed model design were based on instances of failure rather than success. For many members of the Greenfield Project, student culture was a glaring example of this. Looking back, multiple participants felt there was no clear vision for Greenfield student culture in the early blueprint. There was a desire to strengthen community and relationships, to develop stronger social-emotional skills and build intrinsic motivation among students, and to move away from the rigid culture systems of AF Classic, but little attention to how, exactly, Greenfield would accomplish these things. Perhaps not surprisingly, then, student culture in the early implementation of Greenfield was widely considered a bust.

Recalling her impression of what happened with student culture in the large-scale pilots of Greenfield (initial implementation in kindergarten, fifth and sixth grades only), one interviewee said,

> I think that that first year in K, and then in middle school when they saw just things went literally buck-wild. Kids were out of control. I think they just were like, "We're going to do it [the Greenfield model], but we're going to rein it all back. We're going to have control." (Interview 5)

Another interviewee agreed, reflecting that, in an effort to learn all of the different pieces of the Greenfield model and execute them successfully while simultaneously struggling with student culture, something had to give. Thus, the vision for Greenfield student culture was rerouted, and it was decided that the model would proceed with all the trappings of AF Classic student culture. A participant summarized, "It was just like, I felt we started so big, failed so hard and then took a U-turn away from it" (Interview 6).

Thus, the second dimension of AF's approach to constructing Greenfield allowed the organization to learn from its early day-to-day work and from constituents' experiences on the ground. In some ways, this dimension seemed an intentional part of AF's approach. It was a planned, deliberate opportunity to hammer out the particulars of the model that were lightly sketched with IDEO and felt to be contingent upon implementation for further development. In other ways, however, this dimension – or at least the scope of its impact on the model's design – seemed unintentional. Elements of the initial vision were dramatically and at times abruptly changed in response to implementation experiences. One wonders if these shifts in course were always supportive of AF's long-term goals for Greenfield, and if the design of the model was meant to be quite so responsive to early implementation. But regardless of intention, this dimension of AF's approach played a crucial part in Greenfield's construction and in the experiences of those involved with the project.

Dimension 3: Lean on the Inherited Playbook

The third dimension of AF's approach to constructing a new model involved the ways in which Greenfield actors relied on AF's playbook for schooling – often unwittingly – as they

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designed and implemented a new model. If the Greenfield model was a product of ideas from "greenfield" thinking and early implementation, it was equally a product of the prior experiences and knowledge of those involved in the work. As one might expect, those who initiated, designed, and enacted the Greenfield model brought with them particular perspectives, mindsets, values, and general ways of doing schooling. This, in turn, shaped their lenses as they constructed this novel model, and therefore – inevitably – shaped the design of the model as well.

Many of those involved in the Greenfield Project worked for Achievement First, either within an AF Classic school or at the network level, prior to embarking on this project. They had fully internalized AF's "playbook": the organization's carefully developed and honed ingredients, recipes, and general systems for running strong schools capable of closing the achievement gap. Even those who had not worked for AF beforehand often had worked for organizations with overlapping philosophies, such as Teach for America, or for other "no excuses" charter schools. Everyone who was involved with Greenfield quickly became familiar with AF's playbook, learning the CMO's best practices and theories behind "what works." This playbook, then, and its underlying mindsets and values, was a tacit presence throughout the development of the new school model.

In the subsequent subsections, I discuss several influential – and often implicit – mindsets and practices from the AF playbook that Greenfield actors brought to this work. Although I elaborate upon the impact of this playbook on Greenfield's *enactment* later in the paper, I use this space to unpack these core playbook practices and give readers a firm understanding of the playbook's impact on Greenfield's initial *construction*.

Mindsets and values. One of AF's key playbook beliefs was that mindsets matter. This belief was pervasive across every level of the organization. It was something AF screened for when recruiting new teachers, leaders, and staff, ensuring candidates' belief in all children's ability to succeed, their high bar for quality of work, their hunger to improve, their premium on diversity and inclusion, and their "team first" mentality. To many Greenfield actors, the emphasis of these mindsets within the organization was perceived as a great strength of the AF playbook, and therefore a positive influence on Greenfield's design even when applied unknowingly.

For instance, Greenfield leaders and designers seemed to naturally carry over AF's high bar for rigor and quality of work, and direct it toward the Greenfield Project. As one interviewee put it:

> [J]ust the general rigor bar. You can so take that for granted because how many school systems actually have that? At the student level, definitely, but at the general level, you don't put something in front of anybody at AF without it being good. You don't put bullshit in front of people, and that is just not true in most charters and districts around the country. (Interview 18)

This mindset regarding high quality work at every turn was such an integral part of AF's modus operandi that it naturally infused the Greenfield design process, and ensured high quality there as well.

Others spoke to additional organizational mindsets and values that positively influenced Greenfield's construction. These included AF's "orientation to action" (Interview 18); its ability to promote a spirit of camaraderie and collaboration, where "we put aside some of our individual idiosyncratic preferences for the good of the team" (Interview 22); and its recent push for and prioritization of diversity, equity, and inclusion (DEI) initiatives across the organization. For some, these mindsets were part of AF's draw: "That's one of the reasons I came here, because I

was like, 'I need to be with people who think the same way as me'" (Interview 6). Moreover, these values often anchored the Greenfield Project, pushing members to put the mission and work of the team first, to consider ways that Greenfield's design and the collaboration behind it could promote organizational DEI goals, and to be action- and solutions-oriented in every aspect of the design process.

Certain values from AF's playbook were perceived with mixed feelings, and therefore as having both pros and cons when applied to Greenfield's development. For example, over the years, the CMO had begun centralizing and standardizing many aspects of its work, from curriculum design to student culture systems to operations. This was largely considered a source of strength for the organization and a way of furthering student achievement: "I think we're pretty disciplined as an organization. When something's working and is a proven best practice, we scale it and replicate it across the network" (Interview 22). Others saw a downside to this, however, such as stressing consistency in design and implementation to a point that it ignored individual needs or unique situations, and simply assumed that "we can do these things and that A, B, and C will always equal D" (Interview 14). Similarly, "when you're… trying to centralize everything in the model and standardize everything, everything becomes the same, or you're trying to make it the same, and then people feel less ownership of that" (Interview 27). As these latter two perspectives indicate, AF's inclination to centralize and standardize could be seen as a potential hindrance to Greenfield's development, for it might suppress efforts to experiment and to design and enact the school model in fresh ways, or quash individuals' investment in the work.

Systematic coaching. Another core tenet of AF's playbook, transferred nearly in its entirety to the Greenfield model, was its systematic coaching of teachers and leaders. At the time of Greenfield's conceptualization, AF had become known for its comprehensive system of

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ongoing PD aligned with targeted, personalized coaching. All of the organization's employees received some type of coaching and PD, and there were clear benchmarks to indicate success for their respective roles. Teachers had a particularly well-demarcated system, called the Teacher Career Pathway (TCP). The TCP was meant to define and evaluate excellence in teaching, thereby enabling teachers to be recognized along a tiered continuum of teaching and then coached and compensated accordingly.

As the design of Greenfield took shape, AF's coaching system was, for the most part, imported wholesale into the new model. There seems to have been little discussion, if any, regarding coaching of teachers and leaders and how or if that would look different in a new school model. One participant explained, "It's not, 'Oh, how I coach a teacher is *radically* different in Greenfield.' The content's different, but the 'how' is not" (Interview 21). Similarly, although the content of some PD sessions changed to match particular Greenfield needs (e.g., training teachers and leaders about Greenfield-specific elements or curriculum), the approach to PD, at least at the time of Greenfield's construction, remained the same. It was assumed that such a deliberate, careful PD system would grow Greenfield teachers just as it did AF Classic teachers. Furthermore, it seems the system itself was never questioned *because* it was part of the AF playbook for coaching and developing teachers. It simply may not have occurred to Greenfield leaders and designers to modify this approach for teachers in a different AF school model.

Instruction. Long known for its rigorous curriculum, AF had evolved its way of "doing instruction" and, at the time of Greenfield's development, landed on a finely tuned recipe for success. There was a fair amount of direct instruction common to all subjects, but there also was a great deal of time for students to practice skills independently and receive generous amounts of

feedback from teachers. AF aligned the curriculum with Common Core, as well as with state tests and with an eye toward the rigor and content of Advanced Placement classes in high school. The organization adapted some parts of the curriculum from external resources (e.g., Core Knowledge in the elementary grades) while it created other parts completely from scratch. There was a team of curriculum designers and writers at the network level who developed and monitored curriculum and assessment across the network, and supported teachers and leaders in using that curriculum. Teachers and leaders used regular assessments to check student progress and inform ongoing instruction, and data-driven, systematic intervention for struggling students. The network team developed curriculum units, lesson plans, and resources in a largely uniform way, with carefully planned scope and sequences and thoughtful, highly detailed "fundamentals of instruction" for each grade and subject. Even the "intellectual preparation" required of teachers getting ready to launch a unit or teach a lesson was established, as were protocols for teachers and leaders to analyze student work.

Most Greenfield actors had either direct or indirect knowledge of AF's instructional practices, and many – especially those who had worked in AF Classic schools – were supportive. People were appreciative of the time for academic intervention, they liked the data systems, and many felt that having a central team write curriculum for teachers was a godsend, especially for less experienced teachers. Overall, most participants felt that, instructionally, AF had "figured out how to get kids where they need to be" (Interview 2).

Of course, the fact that AF decided to embark on the Greenfield Project indicated some acknowledgement that the organization had *not* fully figured out how to get kids where they needed to be. Yet, given the prominence of the AF playbook on instruction, and the majority-positive view of this method, it is no surprise that many aspects of the AF Classic approach to

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instruction became the Greenfield approach to instruction. Certainly, some areas of the

Greenfield curriculum were unique in their content, structure, and, occasionally, in their

pedagogy (e.g., some science curriculum), but many instructional elements were closely aligned

or identical to AF Classic's curriculum. For example, there was a strong emphasis on individual

student achievement in Greenfield's curriculum, as in AF Classic's. Rarely was such

achievement attained through collaborative work, and rarely through the production of authentic

culminating tasks or interdisciplinary projects (with the exception of some expeditions).

Although Greenfield was seen as an opportunity for dramatic change – instructionally and

otherwise – core elements of AF's approach to instruction lingered, or at best were merely

refreshed.

Culture systems. Arguably the most powerful example of transfer from the AF Classic

playbook to Greenfield was the design for culture systems. Like many "no excuses" schools, AF

had a student culture anchored by clear, rigid behavioral expectations; multiple, primarily

extrinsic systems to incentivize positive behaviors and high academic achievement or effort –

and penalize, or at least strongly discourage, negative behaviors and weak academic effort; and

specific classroom-based and school-wide structures and rituals to celebrate student success

across these areas (behavior, academic achievement and effort, attendance, and so forth). These

types of behavior systems, in particular, were common to many AF teachers', leaders', and

designers' previous experiences, and therefore largely taken for granted when designing the

Greenfield model. While deemed problematic by some players, particularly in the ways noted in

Chapter II – restrictive at best (Golann, 2015) and paternalistic and racialized at worst (Love,

2019) – these systems, their substance and their very existence, remained largely untouched.

Although this AF playbook for culture systems was established and ingrained, there was a point in the Greenfield design process when it was questioned. I heard little about this point, except for acknowledgement that Greenfield student culture was not sufficiently discussed nor adequately fleshed out in the blueprint. I did, as previously described, hear about how student culture went awry in the large-scale pilots of Greenfield (initial implementation in kindergarten, fifth and sixth grades) that deviated from AF Classic culture systems. Inferring from the early Greenfield efforts to even attempt different practices for student culture, it seems the AF culture systems were briefly toyed with and then, like other elements of the playbook, simply carried over to the Greenfield model.

Control. Across the elements of the AF playbook named above, multiple Greenfield members sensed an underlying emphasis on control – one that was fully imported into the new school model. They believed that both students and adults experienced this feeling, though of course it manifested differently for each group and looked different across the roles and levels of hierarchy within the network.

At the student level, control in the AF Classic model took a highly granular form. Adults typically dictated to students how they should sit while working and walk when in line; the approach they should take to solve a math problem, conduct a science experiment, or revise an essay; and the ways in which they could and could not interact with their peers. Some actors perceived this type of control as a well-intended way to support students and guide them toward high achievement, though acknowledged it was not always so beneficial in building executive function or problem-solving skills – and did not always "feel good" to students. (Language and attitudes that, again, reflect the paternalistic elements of the "no excuses" model of which Love [2019] speaks.) As one study participant noted, underscoring part of the rationale behind

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designing the Greenfield model in the first place: "[I]f you're never allowed to independently learn or independently drive towards a goal, then you are going to struggle with that when you get to college" (Interview 1). Other actors were skeptical of the very rationale behind this use of control, acknowledging the potentially racialized dynamics at play by questioning the "need to police bodies," and characterizing the use of control as a reflection of adults "operating out of this supreme power and privilege that you have over kids who don't have a choice" (Interview 14). Intention notwithstanding, most people felt that AF's student culture was simply too "control-driven." In an effort to (ostensibly) support students and avoid the discomfort and messiness that can accompany student agency, AF had gone too far.

At the adult level, Greenfield players also saw elements of control. This was illustrated in various ways, from handing teachers a curriculum to teach, to prescribing teachers' and leaders' professional development, to making top-down decisions at the network level. Players recognized that, like the instinct to support students via highly controlled mechanisms, this approach was meant to be helpful: "I think they [AF leaders] come from a good place. I think they think they're making it easier" (Interview 19). But they often felt that it led to micromanaging and lack of autonomy, which could be frustrating for teachers or leaders, and sometimes dissuade their energy and passion for the work. In addition, some teachers in particular worried that this sense of control, for students and adults alike, indicated a lack of trust, which felt problematic in its own right.

Just as other components of the AF playbook could feel so ingrained and tacit as to be taken for granted, this element of control felt especially so, and seemed invisibly transferred to Greenfield during its development and early enactment. In fact, the thread of control seemed to have transferred to Greenfield in terms similar, even identical, to those under which it existed

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within AF Classic schools. The majority of Greenfield decisions, at least major ones, were made at the network or design team level, then handed down to the school level. Teachers and leaders were required to attend certain PD sessions. Greenfield-specific curriculum and routines were written by the design team and passed along to teachers and leaders. Students' minds and bodies were heavily directed, with few opportunities for ownership and choice. Even during students' self-directed learning time, they were told what to study, and when and how to study it. The sense of control in the Greenfield model may have been unintentional or unconscious, but nonetheless, to some, it seemed antithetical to the creativity and agency the model was supposed to unleash in its students and staff.

Tension Between Approach and Ambition

Achievement First's approach to constructing Greenfield was, as the project's name indicates, predicated on an ambition to reimagine schooling through fresh eyes. Yet the three dimensions of AF's approach conflicted with and constrained this ambition for several reasons. First, a set of inherited conditions (e.g., inherited individual and organizational understandings of student culture and instruction) hovered over construction of the novel model and naturally, often invisibly, filtered actors' ideas. Second, the complexity and uncertainty of the work, largely due to its novelty, the pressure behind it, and its context within an established organization, further complicated and colored Greenfield's development, and created a learning imperative for Greenfield actors. These first two categories – inherited conditions combined with a learning imperative – yielded a third: challenges within the modes of learning needed to manage the process of constructing a new school model, and to cope with the complexity, uncertainty, and inheritance tangled up in this process.

In the sections that follow, I use these categories to begin to address the crosscutting research question, *What complicates these efforts?* The response to this question is not simple, nor can it be answered solely in the context of examining AF's approach to constructing Greenfield; one must also attend to the complicating factors in AF's development of its design, as well as its animation of the model. I tackle those phases of Greenfield's innovation journey in the subsequent chapters, but leverage this chapter to elaborate on and grapple with these complicating factors, and to lay the foundation for future analysis. Through the three lenses outlined above, I carve out an analytic framework through which we can begin to understand with greater clarity and depth the tension between AF's approach to and ambition with Greenfield.

Inherited Conditions

As planned, AF's approach to constructing a novel school model comprised a rational, deliberate series of opportunities for fresh thinking. Phase 1 of the Greenfield Project (see Figure 4.1) focused on brainstorming with internal stakeholders and external consultants, as well as studying a range of practices and scholarship from across the sector, in order to develop a blueprint for the new school. Phase 2 emphasized prototyping and piloting elements of the blueprint and, in doing so, evolving and fleshing out its design. This structure was laid out in linear, sequential terms that, on paper, seemed conducive to AF's goals for Greenfield's design.

In practice, however, the plan was not so straightforward. This was due in large part to inherited individual and organizational understandings that crept into the construction of Greenfield. Achievement First's approach did not take into account these inherited understandings – based on Greenfield players' prior knowledge and experiences – nor did it include explicit means to cope with such understandings. Here, I illustrate specific examples of

the way in which this inheritance pushed back against AF's plan, and how it impinged upon the early construction of Greenfield.

Inherited individual understandings. As Greenfield actors embarked on the work of constructing a novel school model, they brought with them often-tacit inherited individual understandings of student culture and instruction. Even if they tried to put aside their experiences in other schools and their notions of what schools entail, it would have been impossible for Greenfield players to fully abandon such deeply ingrained ideas. For example, given the prevalence of subject-centered (as opposed to interdisciplinary) and teacher-centered (rather than student-centered) instruction in American schools – and certainly in AF Classic schools – one can assume that the majority of Greenfield players had experienced such instruction as students and/or educators. This, in turn, had shaped their understanding of what curriculum and pedagogy ought to look like. Long-held beliefs and practices of instruction and student culture as primarily teacher-driven are hard to shake, especially if not dealt with consciously and respectfully. Furthermore, it seems minimal effort was made to identify these long-held understandings and even try to shake them, aside from encouraging Greenfield players to think outside the box. In light of their experiences, it is unlikely that the actors behind Greenfield's design would have been able to shut out their previously held concepts of teaching and learning, and that these concepts would not seep into the brainstorms and research and blueprint design of the model, even if only unconsciously.

Inherited organizational understandings. Similarly, AF had to contend with inherited organizational understandings of student culture and instruction, as well as of coaching and PD, and of operating schools. The CMO's well-honed playbook dictated much of how AF "did school." Moreover, it was a critical part of AF's ability to replicate strong practices – and, in

turn, strong results – at scale. It would have been challenging to simply put aside routines and practices that were fundamental to how AF functioned. In addition, for the high percentage of Greenfield players who had worked for AF previously and experienced the overarching success of its model, there often was an affinity for the AF Classic approach. For instance, study participants described the curriculum as "strong" and "high quality," and noted that it was "leading to results in many places" (Interview 2). One participant summarized, "Lots of kids were learning a lot. Test scores were rising. When you compared an AF Classic school to many of the schools in the host district, student achievement was significantly better" (Interview 11). Not only were these routines deeply ingrained, they were (by many accounts) effective and familiar to Greenfield actors.

Achievement First's ambition for a blank slate approach, then, ignored the power of prior knowledge and experience. Absent the acknowledgment and active management of such knowledge and experience, those tasked with picturing a green field in order to create a novel school model were inevitably bound by inherited ways of learning, and by inherited individual and organizational understandings of instruction, student culture, coaching and PD, and school operations. Obviously, the influence of inherited conditions could not have been wholly prevented. Yet it seems there were missed opportunities to sharpen key players' awareness of their own inheritance, and those of AF writ large. Steps could have been taken to proactively tackle the power of such an inheritance and potentially minimize its impact, thereby preserving AF's ambition of greenfield thinking in the design and evolution of its novel school model. Furthermore, greater attention might have been paid to whether Greenfield should leverage the AF playbook and, if so, to what extent and exactly how. AF's carefully developed and robust set of systems and practices for "doing school" likely had a place in the design and enactment of the

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Greenfield model; to discard the playbook completely would have been throwing the baby out with the bathwater. But, without explicit decisions regarding which elements of the playbook to incorporate into the new school model and how, exactly, to incorporate them, elements were simply left to creep in on their own – and they did.

Learning Imperative

The logic of a rational, sequential process for constructing Greenfield was compromised by two critical features beyond inherited conditions: the complexity and uncertainty of the work. These features stemmed from the novelty of the construction process, the pressures underlying it, the complexity of the model taking shape, and the difficulties of managing the whole process. In this section, I elaborate on the sources of these features, then go on to consider how the uncertainty and complexity of this landscape established a learning imperative for AF: in essence, because they created conditions that could not be managed by the organization's "business as usual" approach.

Novelty and uncertainty. The initial uncertainty associated with the Greenfield Project stemmed largely from the novelty of the construction process. Greenfield actors were pioneers in their efforts to design a new school model responsive to various needs. They had no peers doing this work alongside or before them. Certainly there were existing schools across the country – charter and otherwise – that had designed new models, or other school systems working to redesign an element of their school model. But there were no high-performing, established CMOs or other school systems trying to construct a completely novel model while continuing to operate a network of schools. Thus, there was no true precedent for the Greenfield Project. Furthermore, most of the actors involved in the Project had no experience themselves in constructing a novel school model, with the exception of some consultants (and the consulting

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firm IDEO). Absent know-how for such work, actors were figuring out this process as they tackled it, and relying heavily on the guidance of consultants.

If the uncertainty associated with such novelty surfaced in the initial phase of Greenfield's construction ("generate fresh thinking"), it also surfaced in the second phase, when AF planned to leverage early implementation to elaborate Greenfield's design. Achievement First's Phase 2 plan to flesh out the Greenfield blueprint through prototypes and small-scale pilots seemed, like the Phase 1 plan, sound and logical by design, but exposed pitfalls once enacted. The blueprint was so skeletal that it *depended* on execution for significant elaboration and refinement, rather than leveraging early enactment only to explore and inform the design. Despite this intentional dependence, there was minimal support (e.g., professional development) planned for the early prototypes and, especially, for early pilot implementation. Without extensive coaching and explicit training on the particulars of the early design, teachers and leaders were left to pioneer the blueprint as they saw fit. This, in turn, rendered the design of Greenfield vulnerable to the inherited conditions that individuals and the organization itself brought to the Project. In essence, if Greenfield actors elaborated the school model's design by doing, and the actors did what they knew (lacking other direction), then the model's design – once fleshed out and enacted – would likely end up looking a great deal like what the actors already knew about schooling. Indeed, this is what transpired.

Complicating pressures. Paired with the novelty and subsequent uncertainty of constructing Greenfield was the complexity of the process. This complexity was derived, in part, from pressure surrounding the Project. For instance, there was a sense of great urgency that accompanied Greenfield's very inception. The Project was primarily motivated by two external factors – student achievement on Common Core-aligned tests and alumni's college persistence –

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which AF determined needed to be addressed immediately. These factors impacted students' success before, during, and after college; they affected students' lives. Without dramatically changing these outcomes for its students, AF felt it was falling short of its mission and promise to families.

The urgency of these motivating factors was compounded by another form of pressure: AF's prior record of success. Although the organization was falling short of its internal benchmarks, it was, nonetheless, widely seen as one of the top-performing CMOs in the country. Indeed, AF consistently managed to outperform its peer district public schools and close achievement gaps on state tests, as well as send nearly all of its alumni to four-year colleges. Thus, if AF were going to overhaul AF Classic, it had a high bar to exceed with the new model. Its current level of success had to be the floor, and, with the Greenfield Project, AF was seeking a new ceiling.

This feeling generated yet another pressure: a need for the new school model to address multiple issues. With so many factors motivating Greenfield, it was expected that the new model would respond to everything, and do so effectively. Just as it would seem pointless to construct a new model that was not capable of dramatically outperforming the traditional model, so, too, would it seem pointless to pursue such an undertaking and not attempt to correct all of the problems that precipitated it in the first place. One Greenfield actor recalled, "I think they [AF] want to see the whole thing. They want to do the kinds of innovation that require changing the plumbing" (Interview 18). In other words, AF did not wish to simply tweak its AF Classic model or even fully redesign specific elements of the model; instead, it felt pressure to bore into the very core of the model and revamp the whole thing.

Complexity of the model. These pressures led Greenfield actors to build a school model that was itself complex. As they generated fresh, greenfield ideas, stakeholders and consultants ultimately constructed a model with multiple components, each of which addressed one or more of Greenfield's motivating factors. Many of these factors overlapped or were somehow connected; it logically followed, then, that many of the model components emerged as interdependent. Constructing Greenfield was not an example of focusing on a single area such as social-emotional learning or self-directed learning, and redesigning, prototyping, and piloting significant features of the AF Classic model to improve that specific area. Rather, constructing Greenfield was an example of trying to design a novel model to dramatically improve multiple areas at once. The complicated nature of the emerging model was itself a factor in the complexity of the design process.

Managing a complicated process. Managing the process of constructing Greenfield further contributed to the complexity of this work. Although there was general agreement on the impetus behind the new model and the goals of the final product, there were mixed perspectives on the direction and effectiveness of the design process itself. For example, not only was it difficult to shake off inherited understandings of student culture and instruction, it also was not necessarily true that every Greenfield actor *wanted* to discard these ideas. Some members of this study questioned, in retrospect, whether the ambition of a greenfield approach was even the right fit. They wondered if, rather than focusing on inventing and reinventing, AF should have left alone the elements of its model that were working reasonably well, and focused only on strengthening or reinventing those elements that were weak. Others questioned the top-down nature of the process, particularly the limited part that internal stakeholders played, as well as the weight of consultants' perspectives.

To exacerbate the complexity of this process, Greenfield was constructed within a network of peer schools continuing to operate with the traditional model. Thus, actors undertook the work of developing Greenfield while surrounded by evidence of the AF playbook and generally inherited conditions. This further decreased the chances of dramatically deviating from this playbook, at least without explicitly identifying and grappling with the understandings embedded in it. To assume that Greenfield actors could genuinely think of fresh ideas, fully unencumbered, was to ignore the environment in which they were instructed to do so.

An emerging learning imperative. The context within which Greenfield was constructed was altogether uncertain and complex. This mattered. Neither uncertainty nor complexity lends itself to rational, linear planning and processes, and surely not in conjunction with one another. To the contrary, these features lend themselves to conditions of nonlinearity and unpredictability that necessitate ongoing evolution and adaption (Patton, 2011). In striving for a rational, sequential approach to constructing novelty, AF struggled to see a process steeped in uncertainty and complexity, and therefore failed to understand – and address – the impact such uncertainty and complexity would have on this process.

The presence of uncertainty and complexity in the construction of Greenfield thus created a learning imperative for AF. Given the complexity of the process – its novelty, the pressures framing it, the mixed perspectives guiding it, and the emerging intricacy of the model itself – as well as the inevitable uncertainty and ambiguity that accompanied this work, AF had to learn to manage a new type of process, and learn from their learning as they progressed. Furthermore, AF had to learn to cope with the presence of inherited conditions knotted together with uncertainty and complexity. Yet these very inherited conditions made such learning difficult.

Inherited Modes of Learning

To consider the sort of learning that would behoove this process of constructing novelty, I draw primarily on theory from Van de Ven, Polley, Garud, and Venkataraman (2008), who describe a cycle of convergent and divergent learning. As laid out in my literature review, convergent and divergent learning behaviors, though distinctly different, are meant to work in tandem with one another. Similar to related theories of organizational change, such as those that focus on the relationship between the exploration of new knowledge and the exploitation of existing knowledge (Hatch, 2000; March, 1991; Peurach & Glazer, 2012; Peurach et al., 2016), on single-loop and double-loop learning (Argyris & Schön, 1978), the relationship between technical and adaptive problems (Heifetz, Grashow, & Linsky, 2009), and that between root and branch methods to navigating complex change (Lindblom, 1959), convergent and divergent learning processes must occur in balance, playing out in iterative, ongoing patterns during times of substantial organizational change.

As a network, AF largely relied on convergent modes of learning. Over the years, AF had grown and evolved as an organization, as well as evolved its AF Classic model. When approaching something novel, the organization typically followed a rational, largely top-down "RDDU" pattern: research (often in practice-based and/or internal contexts), development (again, internal), dissemination (to a single school or cluster of schools), and utilization (eventually at scale across the network) (Rowan, Camburn, & Barnes, 2004). For example, this was the sequence AF usually followed, even if only loosely, when revising a portion of its curriculum or developing a new student culture initiative. The CMO engaged in "trial-and-error testing to design, learn to use, and refine the innovation" (Peurach & Glazer, 2012, p. 161), typically managed by AF Network Support (AFNS) and then disseminated to schools (i.e., convergent learning behaviors). There was little evidence of grassroots processes within the AF model

where, for instance, teachers and parents might play a large role in inspiring, exploring, and informing plans for curricular innovation. Change at AF was done in a fairly consistent, reasonably tidy, top-down manner.

The approach AF selected to build Greenfield aligned closely with the organization's inherited mode of learning. It reasonably followed, then, that these inherited organizational learning patterns would frame the work of constructing Greenfield, just as inherited individual and organizational understandings were imposed upon it. For example, prior to prototyping components of the model, AF created a Greenfield design team to "build and/or integrate and test elements of the model, including: instructional content, technology, schedules, budgets, architectural space, staffing, and more" (Sawch, 2016, p. 4). This design team, which grew in size and responsibility as development and implementation of Greenfield continued, oversaw trial-and-error testing of the prototypes. The team continually iterated on the prototyped model elements until they gained definition, and supported teachers in incorporating these iterations so that their implementation of the elements moved closer to the desired vision. As this occurred, the team "push[ed] ideas into currency" (Van de Ven et al., 2008, p. 185), ensuring the early prototypes yielded tight model components ready to be integrated into larger pilots.

Throughout the construction of the Greenfield model, there were few examples of divergent learning that might work in tandem with these convergent learning patterns. Teachers, for instance, were not encouraged to explore and seek new ideas or directions with the model elements they were prototyping. The design team focused so heavily on trial-and-error testing that there was little opportunity for "learning by discovery" (Van de Ven et al., 2008, p. 185) in collaboration with teachers. Nor was there encouragement of diverse perspectives on the

prototypes, particularly those of teachers, students, and families; the goal was to reach consensus and get the model element sharp and ready for replication.

Balance between convergent and divergent learning is necessary for successful innovation processes. Yet AF never achieved such balance. To be clear, the organization was not wrong to leverage convergent learning in service of constructing a new model; rather, it was shortsighted to do so at the expense of divergent learning. Uncertainty and complexity require divergent behaviors. They depend on exploration and creativity, acceptance of ambiguity and irregularity, and input representing a range of perspectives. By leaning so heavily on inherited patterns of convergent behavior, AF applied a form of learning that, on its own, was maladapted to the task.

Consequences. The consequence of this imbalance in learning modes was an attempt to construct a novel model utilizing a novel approach but, in actuality, the approach adhered to worn, familiar patterns. For example, as discussed above, AF intended to incorporate multiple perspectives and be responsive to input from a range of internal stakeholders (e.g., teachers, families, and students) when brainstorming ideas for Greenfield. But in practice, these stakeholders seemed to play a limited role in constructing the model – and by some accounts, only a cursory role. In fact, the process of constructing Greenfield sometimes felt so top-down that stakeholders worried about examples of well-intended, external consultants imposing their ideas without truly considering what AF wanted for Greenfield, and what was best for this particular community. One interviewee, for instance, questioned whether the process of partnering with IDEO, although it led to "interesting and good answers… didn't lead to [AF's] answers" (Interview 18). (In other words, IDEO supported AF in generating intriguing ideas for innovating on its model, but not everyone felt those ideas were a good fit for AF's specific

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contexts, and for the goals and interests of AF actors.) These external partnerships, by some

measures, reinforced a top-down approach rather than strengthening collaboration with school

leaders and teachers or building capabilities for openness to ideas that differed from AF's

inherited conditions. A collaborative approach, or encouragement of new ideas and practices,

was not the pattern AF had used in other instances of innovation, so adopting such an approach

now for a substantial innovation process would have required a significant shift in how AF

learned from and thought about constructing novelty.

Conclusion

By treading a familiar learning path, yet one strewn with a combination of inherited

conditions, uncertainty and complexity, AF's approach to Greenfield was in tension with its

ambition for the new model. The organization wanted to produce something different and

innovative – something on a green field. Yet it went about initiating and constructing the

innovation using what it knew: inherited individual and organizational understandings about

"doing school," as well as inherited ways of learning and pursuing novelty. Innovation, by

nature, is marked by ambiguity, lack of control, complexity, and non-linear processes. The

journey warrants explicit acknowledgement and management of these characteristics.

Achievement First, however, perhaps reluctant to embrace the features endemic to innovation,

instead imposed a deeply entrenched process of constructing the model that was a poor fit for the

task.

Multiple environmental factors compounded these problems. Although AF devoted

considerable resources and human capital to the Greenfield Project, it was simultaneously

running an entire network of schools that served thousands of children across three regions, and

continuing to open new schools within that network. As it sought to overhaul its model with

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Greenfield, the CMO also made substantial changes to its existing AF Classic model in order to immediately address the confounding issues of low student achievement on CCSS-aligned state tests and low alumni college graduation rates. These changes included, among others: revisions to the curriculum and to how teachers intellectually prepared to teach the curriculum; improvements to teacher and leader development; a new "AP for all" course of study for high school students; efforts to strengthen school culture, especially with an eye toward lowering suspension rates; and targeted interventions to better serve students with disabilities. Thus, the context within which Greenfield was constructed was one of shared goals, resources, and talent, as well as one that put more pressure on Greenfield actors: they had to keep up with all of the changes AF was making to its Classic model, and then create a model that surpassed Classic.

Given these circumstances, internal and external, it was unsurprising that the organization began to produce a school model that, in distinct ways, resembled the existing AF Classic model. Elements of learning and teaching might be envisioned and structured differently in Greenfield, but they gravitated toward traditional curriculum and pedagogy. The content of coaching and PD might be Greenfield-specific and therefore somewhat novel, but the structure and top-down nature were anything but. Student culture might emphasize new habits of success, but the rigid expectations and extrinsically based systems in which teachers were meant to cultivate those habits were the same as before. Ultimately, AF needed to approach innovation in innovative ways, and it did not.

In the following chapter, I turn to unpacking the design that resulted from this approach. I describe the ways in which Greenfield actors (primarily designers and school leaders) in their efforts to elaborate and refine Greenfield's design, again struggled to stray from familiar paths. I

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then examine the consequences of treading that path, and track the development of Greenfield as

its innovative sheen began to fade.

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CHAPTER V

Developing and Refining the Design

In the previous chapter, I described the approach taken by Achievement First (AF) to construct a novel, whole school model, absent precedent. I examined the three dimensions of AF's approach: 1) generating fresh ideas using a blank slate approach; 2) leveraging early model implementation to flesh out the school's design; and 3) leaning on AF's playbook for "doing school." In examining these dimensions, I surfaced a central tension of the work, namely that the process of enacting this approach conflicted with the ambition behind it. This, I contend, was due to a combination of factors: the inherited individual and organizational understandings that Greenfield actors brought to the Greenfield Project; the learning imperative created by the uncertainty and complexity endemic to innovative work; the dissonance between the organization's inherited mode of learning and the type of learning actually required to pursue innovation; and the lack of acknowledgement and management thereof. Given the tension embedded in this work, my second research question focuses on the design that resulted from this approach, and asks, *What are the central components of these models?* This question is complemented by a crosscutting research question that focuses on the development of these design components: *What complicates these efforts?*

With its Greenfield design, AF devised a model comprised of novel, Greenfield-specific components that combined with previously existing AF network-wide components. What

resulted were two distinct sets of components, some consciously designed for Greenfield, others consciously or unconsciously adopted from AF Classic schools. These elements were responsive to the multiple factors that motivated the project, and were intended to work in conjunction with one another to form a school model unique within the AF network. Under some circumstances, the Greenfield-specific elements and AF-wide elements meshed well, as intended; more often, however, they clashed. These clashes, such as that which occurred between the desire to cultivate novel "habits of success" but within the framework of existing – and contradictory – student culture and instructional practices, resulted in a layered, hybrid Greenfield design. This design thus reflected the inherited understandings that Greenfield actors carried with them *and* the novel features devised in the early phases of the Greenfield Project. It was, in many ways, reminiscent of AF's Classic model.

In this chapter, I first identify the essential outcomes and design anchors that AF used to guide the design of its new school model. I then unpack the Greenfield-specific elements that comprised the model, followed by the AF-wide elements meant to complement them. I close by analyzing the challenges that arose in attempting to merge these two distinct sets of elements, and once again exhume ways in which inherited conditions, combined with the uncertainty and complexity of innovation, constrained the intention behind the Greenfield design.

Greenfield Design Pillars

As explained in Chapter IV, AF's Greenfield Project was motivated by multiple factors, both internal and external to the organization. Like many school systems, AF was vulnerable to local, state, and federal policy changes, and to other goings-on within the environment. The introduction of the Common Core State Standards (CCSS) and aligned state tests, quickly followed by plummeting test scores, weighed heavily on AF. So, too, did the weak college

success rates of its early alumni. These pressing external factors were compounded by internal factors. AF stakeholders were eager to respond to shortcomings within the AF Classic model and do better by their students and families; keen to push for AF to be a leader in the fight for educational equity and an organization at the forefront of the school reform movement; and anxious to improve staff sustainability. Given the scope of these motivating factors and the urgent desire to respond to each one, those charged with developing the Greenfield school model had a tall order.

In the subsequent section, I describe the design pillars that emerged in response to these motivating factors. I outline the four essential outcomes and three design anchors that guided the Greenfield design, and explain their connection with the initial motivation behind Greenfield, as well as their connection to one another.

Essential Outcomes

Through the first dimension of its approach to constructing Greenfield, AF worked to define the specific goals that it sought to achieve with this school model. Broadly, the CMO had an aspiration to, as one study participant put it, "Prepare kids for college and life and to be able to enter college with the level of academic rigor, the social-emotional and life habits necessary to thrive in college and in life" (Interview 10). Leveraging research, and in collaboration with the design firm IDEO and other consultants – as well as with internal stakeholders – AF concretized this aspiration, arriving at four essential outcomes for the project: 1) Accelerated Academics; 2) Habits of Success; 3) Excellence in Enrichment; and 4) Student, Family, and Staff Motivation.

Accelerated academics. By naming "accelerated academics" as the first of its four essential outcomes, AF was doubling down on its network-wide promise to provide a robust academic education for its students. One Greenfield actor acknowledged, "We're Achievement

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First. That's the name of the organization. It's very true within the [Greenfield] model.

Academic results are… by far the most important" (Interview 13). Another actor concurred,

noting that with the design of the AF Classic model, the CMO had made a "bet on academics,"

and now with Greenfield, "we're still making a very strong bet on academics" (Interview 2).

The idea with Greenfield, however, was to push this bet even further. Citing research that

suggests rigorous academic preparation is the leading driver of students' college success, AF

explained in its Greenfield Blueprint:

> Our students need to be among the best in the world. We start with the premise that
> students can and will achieve excellence in academics – the kind of excellence that would
> manifest in students passing 10 AP classes by the time they graduate, ranking with top
> students around the world on PISA [an international assessment], and performing at high
> levels in the country's top universities. (Achievement First & IDEO, 2014, p. 15)

In light of its students' struggles with Common Core-aligned state tests and its alumni's

struggles with college persistence, AF knew that it had to strengthen its academic program. With

the goal of accelerated academics, the organization wanted to better differentiate instruction in

the new school model, particularly for those students who were ready for increasingly

challenging and fast-paced instruction, and to generally push students to achieve more and do so

earlier in their schooling. In addition, AF wanted Greenfield to emphasize mastery-based

learning where students demonstrated proficiency on specific academic standards and skills

before moving on, thereby allowing teachers to know at all times exactly where students were

academically, and when to push them to the next level.

Habits of success. Whereas in the AF Classic model the primary focus on academics

often felt like the *sole* focus, in the Greenfield model there was ambition to evenly tackle all of

the desired outcomes. Based on AF's research and, especially, on the data it collected from

alumni, the organization knew that robust academic preparation was necessary but not sufficient

for the type of college success and life success it sought for its students. Nor did it go far enough in providing the type of educational equity for which AF aimed. Other skills were needed, too.

One critical element for such success – which AF realized was largely missing from its Classic model – was the explicit pursuit of "soft skills" that would complement and further students' "hard" academic skills. In a staff training session for new Greenfield teachers, the facilitator noted, "In our high schools, we have historically done all the thinking and organizing for kids," and then many of the kids struggled to independently manage those skills once they arrived at college (Fieldnotes, July 2017). Indeed, when asked for their feedback to inform the design of Greenfield, alumni often spoke, for instance, of challenges with time management post-high school. One said, "Time management skills are a big deal in college. They should be learned and applied over and over, not just once" (Greenfield New Teacher Training Presentation, July 2017). Even in elementary and middle school, AF schools were highly and intentionally structured in an effort to support students, but the structure came at a cost. One Greenfield actor explained:

> I think the big problem that we are continuing to realize is that when you take that away— if you've always given kids a ton of structure and support and then you pull it away, students haven't over time built the skills to be independent in terms of motivation, executive function, finding their own purpose, being able to solve problems. (Interview 11)

To combat this, AF named "habits of success" the second of its essential outcomes for the new school model. Using research and input from consultants and stakeholders, six Greenfield habits of success[7] were designated: curiosity, personal growth, empathy, gratitude, drive, and teamwork. Achievement First justified this outcome in its blueprint:

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[7] As of this writing, the Greenfield Habits of Success had evolved into a new set of "Life Habits" (drive, teamwork, curiosity, growth mindset, dream, identity, empathy, gratitude, presence, and balance), based in part on the Compass Habits and Curriculum that AF adopted from Valor Collegiate Schools as part of its refining of Greenfield's social-emotional curriculum.

We know that our students' long-term success requires even more than world-class academic knowledge and skills. Our students will truly thrive when they also develop the habits, mindsets, and life skills that promote productive and joyful lives, including growth mindset, curiosity, empathy, creativity and time management. (Achievement First & IDEO, 2014, p. 17)

Excellence in enrichment. In addition to focusing on hard and soft skills, AF identified "excellence in enrichment" as its third desired outcome for Greenfield. With this outcome, AF was making a commitment to authentically integrate enrichment experiences into the new school model, increasing both the quantity and quality of that time. The organization aimed to spark interest and "unlock passions" in its students beyond the scope of traditional academics, fuel students' engagement and investment in school, and generally broaden their horizons. Furthermore, it hoped that greater exposure to enrichment would complement students' academics and support the cognitive work required in traditional academic subjects. Achievement First wrote in its Greenfield blueprint:

Our students need and deserve the opportunity to pursue excellence outside of traditional academics. They need a taste of the joy that comes from passionately pursuing greater skills and the cognitive and emotional enrichment that creates. (Achievement First & IDEO, 2014, p. 19)

In identifying excellence in enrichment as its third outcome, AF also had an eye on students' interests and success beyond the K-12 realm – as it did with the first two outcomes – as well as an eye toward building greater equity in education. The CMO wanted to leverage this outcome to expose students to interests and ideas that could one day manifest into careers. Achievement First knew from research and from interviewing its own alumni, particularly those who were first-generation college students, that early exposure to certain fields such as STEM or music enables professional choices that otherwise might not be possible. Moreover, this decision to invest in enrichment could be seen not only as practical for students' futures, but also as having an equitable bent. This outcome demonstrated a conscious attempt by AF to leverage the

new school model to promote equitable educational opportunities. As one interviewee said of

these enrichment experiences:

> I do think those are life-changers for kids. That's going to give kids more of experiences
> that they may not have otherwise. That kids in upper-class, more suburban schools—
> they're having those opportunities. They go away for summer camp. Things that our kids
> don't necessarily have the opportunities to experience. (Interview 5)

By locating this outcome as one of four equally important goals for its Greenfield model, AF was

placing the many benefits of high-quality enrichment at the forefront of its work, and making a

large bet on the impact of such enrichment.

Student, family, and staff motivation.   The fourth and final outcome that AF named for

Greenfield was "student, family, and staff motivation." This outcome was partly derived from

AF's acknowledgment that its existing instructional program was not sufficiently engaging or

motivating for students, leading to a general desire to make changes in order to increase student

investment and motivation in school. Additionally, and perhaps more significantly from the

CMO's perspective, the outcome was derived from AF's research regarding college persistence,

especially for first-generation college students (including many AF alumni). Achievement First

knew that its alumni would need strong networks of support in order to find success in college,

and that students needed to start building those networks – and learning *how* to build those

networks – now. Families and staff needed to be part of this equation, not only as cornerstones

of students' K-12 support networks, but as people positioned to champion students in college and

beyond, and positioned to guide students in continuing to develop their own support networks

during that time.

An additional rationale for this outcome was AF's instinct to galvanize students, families,

and staff to join forces and collectively propel students' education. One Greenfield actor

referred to this as "an aspiration… to build more student agency and ownership over their

learning, to make the learning feel more team-oriented and like a partnership with the community, families, and students" (Interview 14). Another actor said this outcome simply indicated a desire to "just set kids and parents on fire motivation-wise and engagement-wise" (Interview 4). Achievement First summarized in its blueprint:

> Our students, staff, and families will exhibit an unstoppable level of shared commitment and drive – consistently going the extra mile to inspire each other to push on in pursuit of their dreams. (Achievement First & IDEO, 2014, p. 21)

This outcome was a result of AF's theory that, even if academics were accelerated, habits of success were cultivated, and excellent enrichment opportunities abounded, the new model would still fall short unless students, families, and staff were deeply invested in students' education, and motivated to genuinely partner in service of that education.

I want to pause here and recognize that, with this outcome (and some of the language framing it here and elsewhere in the paper), one might question whether AF was suggesting that its students and families were not sufficiently invested in students' education, and motivated to achieve. To suggest such problems of motivation, engagement, and caring in students and families panders to a deficit narrative frequently heard (falsely, unfairly, and dangerously so) about students of color and students in high-poverty schools (Milner, 2012; Yosso, 2005). Although my findings consistently support AF's positive intentions and that of their actors, I cannot speak to the nature of their underlying lens and characterize it as deficit- or asset-based. I do, however, think it is important to raise and consider this question across the evidence I present.

Design Anchors

Once AF named the four essential outcomes for its novel school model, it had to determine how the model would actually achieve these goals. Thus, the organization began to

design backwards from these outcomes, and, in doing so, settled on three anchors that would guide its design: "accelerated expectations"; "awesomely powerful community"; and "ownership and personalization." I briefly describe each anchor below.

Accelerated expectations. One of the key mindsets from the AF playbook, transferred to the Greenfield Project, was an emphasis on high expectations. As Greenfield designers translated the identified essential outcomes into concrete design components, they wanted to infuse this anchor across the model. Just as with its goals, AF was determined for these accelerated expectations to apply evenly to the manifestation of all its outcomes, rather than be specific only to the academic goal. Achievement First envisioned a school model with equally lofty expectations for achievement in academics and enrichment, as well as for habits of success and motivation. Every element of the model's design was intended to reflect and nurture accelerated expectations.

Awesomely powerful community. Similarly, AF wanted a "deep sense of belonging and shared purpose with all members of the school community" (Achievement First & IDEO, 2014, p. 27) to permeate the new school model's design. Greenfield players felt that this sense of "awesomely powerful" community would help invest parents and extended families, as well as teachers and staff, in the success of individual students and in the success of the school itself. This, in turn, would make students feel "supported, challenged, and responsible for contributing to the success of others" (p. 27). One interviewee summarized, "Awesomely powerful community wraps around the entire thing" (Interview 10), noting that the anchor closely aligned with the essential outcome of "student, family, and staff motivation" while also serving as a mechanism to bring all four of the essential outcomes to fruition.

Ownership and personalization. Last, AF saw "ownership and personalization" as another thread to link the essential outcomes and ensure their achievement in the design of Greenfield. Achievement First wanted a model in which students would feel ownership over their learning and thereby feel increased agency over their lives. Such ownership and agency would then unleash students' intrinsic motivation, thus giving them the necessary drive to persist in the face of challenges and "sustain hard work over years" (Achievement First & IDEO, 2014, p. 27). In addition, AF anticipated that the Greenfield design would enable greater personalization of students' learning, both to increase student achievement (and do so in a "more efficient" manner) and to increase student motivation.

These three design anchors were intended to work in tandem with one another. In the Greenfield blueprint, AF noted that other schools often home in on one or two of these anchors, but AF was deliberate about finding the intersection between all three anchors and producing a school design that embodied that intersection. Achievement First felt that hitting this point of confluence was the key to creating a "unique learning experience" for students (Achievement First & IDEO, 2014, p. 29) and maximizing its essential outcomes. In turn, the CMO reasoned, the resulting design could be fully responsive to its initial motivating factors, and bring about the change desired by the organization across multiple fronts.

Model-Specific Components

Achievement First leveraged its design anchors to create a school design that would maximize the outcomes it determined essential to achieve. In doing so, designers developed a model that merged novel, model-specific components with elements previously used in AF Classic schools. In this section, I explore the core Greenfield-specific components: goal team, dream team, self-directed learning (SDL), expeditions, and enrichment. I unpack and

contextualize each element, and, where applicable, shed light on the distinction between the original vision for the element, the design derived from that vision, and the design as enacted. I then highlight the way in which each element drove toward the model's desired outcomes and aligned with the three design anchors, thereby addressing Greenfield's motivating factors.

Goal Team and Dream Team

A cycle of goal-setting and reflection was designed to be at the heart of the new school model. Goal team, dream team, and the social-emotional learning practices that bound these two components together, were seen by many as the "engine" that drove Greenfield. By characterizing these paired components as the school's engine, AF was positioning them as a driver of high achievement in academics and enrichment, as a way to cultivate habits of success – and as a way for habits of success, in turn, to propel achievement – and as a mechanism for student, family, and staff motivation.

Goal team. The goal team consisted of a small group of students – initially six to eight students per group, although that number later increased to 14-16 students – led by a teacher serving as the team's goal coach. In the original vision for goal team, the full group met weekly with their goal coach to review their goal progress and do "check-ins on well-being" (Achievement First & IDEO, 2014, p. 39). Daily, students met in pairs with an assigned "running partner" – peers who could "support and push" each other (p. 37) – to review and reflect on their goals. Initially, students were expected to completely own their goals in academics, enrichment, and the habits of success, continually setting, tracking, reflecting on, and revising goals as needed. Goal coaches were seen as facilitators, coaching students in their pursuit of goals, pushing them to accelerate their expectations, and supporting them if they struggled.

This original vision for goal teams quickly evolved, however, and the design shifted. With the revised design, the goal team group met daily and, although the structure and focus of this time varied over the course of the week, the meetings typically incorporated some combination of reflecting on and setting goals, developing the six habits of success, and cultivating a strong sense of community. For example, on Mondays, students[8] received a weekly individual progress report that indicated how they were progressing across subjects. (I elaborate on the progress reports in the Self-Directed Learning section, below.) After studying their report, students spent time reflecting on their growth and then, with the support of their goal coach and using a brief questionnaire, students set a specific, tangible academic goal for the following week.

For the rest of the week, goal team time consisted of two days of sundry habit- and community-building work alternating with two days of a structured practice known as Circle. The non-Circle days incorporated a blend of written and reflective SDL tasks to help students hone their habits of success and simultaneously prepare for Circle, as well as different forms of community-building group work, usually of teachers' choosing. (This general group work was not explicitly mapped out in the design of goal team, and therefore implementation varied considerably across and even within grades.) Once students completed their goal team-related SDL work, they often turned to academic SDL work in which they needed to catch up or wanted to move ahead.

The practice of Circle, adopted and slightly adapted from Valor Collegiate Academies in Greenfield's 2017-2018 school year, was also intended to cultivate a sense of community,

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[8] Although the core Greenfield-specific components were consistent across kindergarten through sixth grade (note that the model had not yet grown beyond sixth grade at the time of this study), their enactment was intentionally different in the lower elementary grades (K-2). Unless otherwise indicated, the unpacking of these components refers either to general aspects applicable across all grades, or aspects specific to the model in third grade and above.

develop habits, and generally nurture strong relationships and a sense of identity. During Circle,

the goal coach facilitated a goal team session using a specific protocol to support individual,

relationship, and community growth; this protocol mirrored one used in a parallel adult Circle

held weekly among the faculty. Although Greenfield players had mixed feelings about the

success of Circle's implementation, most agreed that it had great potential to support the goals of

the model. One interviewee said, "I really do believe when done well, the… Circles can have a

powerful [impact]—you know, the relationship-building work and the community work, as well

as, of course, the individual self-directed work" (Interview 22). By incorporating Circle and its

accompanying SDL work, Greenfield designers gave considerably more structure to the original,

somewhat amorphous version of goal team, and began to introduce the backbone of a true social-

emotional learning program into the model.

The goal team structure aligned closely with each of Greenfield's design anchors, albeit

slightly differently in the structure's original and evolved states. It gave students increased

ownership and personalization over their education, because they could set and pursue their own

goals (to some extent, that is: goal-setting, per the evolved design and enactment, often had

heavy guidance from the goal coach, as did the focus of student's work; see the Self-Directed

Learning section below for further discussion) as well as track their progress toward said goals.

In the AF Classic model, one Greenfield actor acknowledged, "We were shooting for the goal *for*

kids. We weren't helping them know what they were shooting for" (Interview 2). Goal team

helped to remedy this. The structure also gave students opportunities to strengthen their

relationships with peers and adults, thereby generally strengthening students' community to

support their growth. Indeed, Greenfield players consistently referred to goal team as a way to

"feel more deeply connected to other people, to explore who you are as an individual and your

goals," as well as a way for kids to simply feel "more known" by their goal coaches, and for those teachers to know "kids better as people, not just students" (Interview 11). Finally, AF contended that goal team – its mix of goal-setting, reflection, habit development, and relationship-building – put students on track to accelerate expectations for their education, and then achieve those expectations. One interviewee explained that, in theory, "If you have purpose, you're more motivated, and then you will work harder and learn more – whether the learning is academic or otherwise" (Interview 4). Furthermore, because of students' ownership over their goals and control over the pace at which they worked to achieve those goals, they could – in theory – truly accelerate their progress through the academic curriculum.

Dream team. The dream team element was a close companion to goal team. Each student could select their own dream team, typically comprised of parents or other caregivers and (ideally) extended family, siblings, and potentially additional sources of support such as a family friend, coach, or pastor. The purpose of this self-selected team was to "capitalize on all the love that surrounds students in their lives… to support students in articulating their aspirations, stretching their sense of possibility, catching them when they fall, and converting their dreams into goals" (Sawch, 2016). Three times a year, in lieu of a traditional parent-teacher report card conference, students came together with their goal coach and dream team to discuss their progress. These dream team meetings were envisioned to be student-led (although the degree of student facilitation varied in practice) and a chance for students to "showcase the goals they've met, challenges they've overcome, and their path ahead" while providing "mentorship and encouragement to stretch [students] even further" (Achievement First & IDEO, 2014, p. 37).

Unlike with goal team, there was stability between the original vision and eventual design for dream team. Although the nuts and bolts of the structure evolved (they were never actually

clarified in the original vision) the outline and aims of the vision and design remained consistent.

Dream team as enacted, however, diverged from its vision and design. Rarely did a full team of people attend a student's meeting; usually a parent or two attended, sometimes with a sibling in tow. The student's role varied widely, often depending on the style of their goal coach, their progress in school, and the dynamic of the meeting as it unfolded. Some goal coaches had their students create and present from a short PowerPoint to guide portions of the meeting (e.g., naming something they were proud of), while others simply prompted students to articulate particular areas of challenge and progress, and identify goals they were working toward. The meetings typically lasted 15-20 minutes rather than an hour and, because they were based on that week's progress report (which families received every week), were a fairly superficial review of the child's academic progress to date. There were few instances of deeply "showcasing" goals, sharing school artifacts, or connecting short-term school goals with long-term dreams. Nonetheless, even as enacted, dream team was a significant departure from AF's traditional report card parent-teacher conferences, a bold step in the direction of its vision, and a Greenfield element full of possibility.

The complementary components of goal team and dream team were repeatedly described as a "breakthrough" and a potential "game changer for kids and for families and for educators" (Interview 4). Dream team, specifically, was seen as a powerful way to promote student ownership in that it "changed the face of what it really means… for kids to speak about themselves and to know and be self-aware about all things themselves" (Interview 2). The structure, as designed, gave ample opportunity to build the "awesomely powerful community" so critical to Greenfield's goals because it got "kids talking about what they want to be when they grow up and getting support from their loved ones and problem solving things that they're

struggling with right now. Everybody… [was] on the same page" (Interview 12). Dream team addressed the need to build a support network to sustain students through their K-12 education and beyond, as well as the need to teach students the skills to build and sustain such networks themselves. Moreover, working in tandem with goal team, dream team helped students accelerate their expectations for themselves by keeping their goals at the forefront and by holding them accountable to those goals. One interviewee summarized:

> If your parents and a community member and your family, if they're all in tune to… what you're doing in school, what you should be doing with your goals, then they are checking in with you. They're asking you. You have a goal coach who's also checking in and asking you questions. That might be one side of the forced push that's making you be like, yeah, I have to do this. One, because I don't want to let these people down, but two, because it's what I said I wanted to do. (Interview 14)

Thus, goal team and dream team, while only two pieces of a larger set of Greenfield-specific components, were central to the model's design, interacting with all of the other components.

Self-Directed Learning

Self-directed learning was one of four learning modalities leveraged in the new model. Students also engaged in small-group (5-8 students) and large-group (14-16 students) learning, which, although not unique to Greenfield, were sometimes implemented in novel ways because they were part of a four-pronged approach. In addition to these three modalities, students engaged in expeditions, two-week periods of beyond-school learning interspersed at regular intervals throughout the year. (I devote a full section to expeditions below.) Achievement First theorized that utilizing four modalities of learning would allow different subjects to be taught in the particular mode(s) deemed most effective for student learning. This, in turn, stood to accelerate academics, increase ownership of student learning and, because of the chance to accelerate and personalize, ratchet up motivation.

During SDL, students worked independently through subject-specific digital modules designed to align with the focus standards and content of the unit at hand. Students progressed through carefully curated playlists created by members of the Greenfield design team, minimally supplemented by existing digital programs as needed, such as Zearn or ST Math for math work. The playlists primarily contained a mix of texts and videos, as well as games and activities (e.g., vocabulary activities). Students proceeded through the playlists with an accompanying, highly structured paper study guide to capture their notes, respond to questions, and reflect on how well they were grasping the focus skills or focus content of the module. Once students had completed a module or mastered a particular standard or topic within a module, their supervising teacher checked their study guide, then unlocked an online module assessment for the student to take, thereby allowing them to move onto the next module (if they passed; if not, they would stick with the current module and retake a version of the assessment when ready).

Teachers and students kept track of student progress on their respective modules via a personalized learning platform (PLP). Students used their PLP to access the digital modules for each subject, as well as to determine how they were progressing within and across the modules. Because the Greenfield curriculum was competency-based, progressing through modules and passing assessments was (ostensibly) indicative of student mastery on the standards and skills included in those modules. Teachers could refer to a dashboard on the PLP that allowed them to check each student's progress and then intervene as needed, providing in-the-moment feedback, intervention, or encouragement as necessary.

Self-directed learning, as the name indicates, was intended to be a time when student learning was self-guided. Similar to the concept of flipped classroom, students used this time to preview new knowledge, build background knowledge, or further break down and reinforce

learning so that small-group and large-group learning times could be spent strengthening critical

thinking skills in discussion, labs, and other forums for problem-solving and analytical work.

Per the original SDL vision, students could determine, within the scope of the modules, what

content to work on for a particular subject and at what pace to work on it. Initially, AF

envisioned student choice during SDL consisting of a chance to:

> [A]ccelerate or slow down the pace at which they move through content; …choose in
> what order they take on certain tasks; …choose different practice methods through a
> "playlist" to master certain objectives; [and] …choose between multiple curated
> resources to deepen content knowledge and between multiple options to demonstrate
> their mastery. (Achievement First & IDEO, 2014, p. 44)

Similar to the original vision for goal team, SDL teachers were seen purely as facilitators,

available to "offer guidance and feedback as students practice independently and master

objectives" (p. 44), as well as to ensure behavioral norms conducive to such work.

Once implemented, however, AF realized that this degree of choice, freedom, and general

autonomy seemed to overwhelm many students – and, therefore, overwhelm and frustrate the

teachers tasked with supporting students during this time. As a result of this overwhelm, many

students were unfocused and disengaged during SDL, and began to slip academically.

Therefore, in an effort to better leverage SDL, Greenfield designers adjusted the layout of the

component. Designers incorporated more structure (e.g., the highly structured study guides to

help students process their learning and hold them accountable for it) and decreased the amount

of choice (e.g., students followed the order of the tasks within each playlist, and had fewer

optional tasks and mostly required tasks instead). As enacted, teachers and leaders began to add

even another layer of structure, directing students which module or portion of a module to

prioritize during SDL, at what pace they should try to complete their work, and how they should

comport themselves (e.g., working silently, with bodies and pencils positioned just so) during SDL time.

Paceline. One outcome of the restructured SDL time was the introduction of a grading and tracking tool that AF called "paceline." This was a digital platform that tracked where students were in each subject, noting their current module or level, as well as the specific standards or skills they had mastered. Paceline was intentionally transparent so that students and their families always knew where students were academically and how they were progressing relative to their personal goals, to the growth of their peers, and to the school's desired pace and benchmarks for each subject. The platform was considered a measurement tool and a new, Greenfield-specific way of grading. Rather than Greenfield students receiving traditional grades on report cards, they received a weekly progress report denoting their movement on paceline across the core subjects. Based on their cumulative performance at that juncture, students' progress was designated "advanced" (above pace), "proficient" (on pace), "approaching proficient" (slightly below pace), or "not proficient" (significantly below pace) for each subject on the progress report. The platform also had the capacity to generate data reports for teachers and leaders, thereby allowing them to analyze student-specific data as well as class-, grade-, and school-wide trends within and across subjects. For a data-driven organization accustomed to prioritizing academic achievement using quantitative measures, paceline was a logical fit.

For some Greenfield actors, however, paceline seemed to run counter to the goals of SDL. One interviewee explained:

> I think kids do need that time of SDL where they are self-guided and they can go at their own pace. We've just completely changed it into this, "You need to pass five lessons a week. Every week." We're telling kids, "You're behind. You're not proficient." It's like, "It's *self-guided [laughter]* learning. How could he be not proficient in self-guided?" Our way of evaluating and putting a metric on everything really damages that part of Greenfield for what it was supposed to be. (Interview 5)

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Others expressed concern that paceline reduced learning to a paceline "grade" and left no room to celebrate student growth and effort. They wondered if paceline, along with other limitations placed on SDL, conflicted with the design anchor of "ownership and personalization," thereby quashing student investment and motivation. This was especially a concern for those students who were consistently behind on paceline, or for students whose goals did not fall neatly into prescribed, narrow academic buckets (e.g., "This week I want to pass X module in humanities").

Yet paceline was a valuable tool that aided Greenfield's effort to consciously drive toward the essential outcome of accelerated academics. It gave greater definition and transparency to the setting and collective monitoring of student goals, thus further concretizing the substance of the goal team and dream team engine. Theoretically, AF posited, this level of clarity stood to further motivate students, families, and staff in achieving their goals, as well as hone students' habits of success as they used the paceline scaffold to help them navigate the challenges of SDL.

Split classes. A second major outcome of the SDL component was the use of split classes for a majority of instruction. SDL itself was conducted in half-class groups, typically 14-16 students with one teacher supervising and supporting them. This structure then set up the other half of the class to also work with a teacher in a half-class-sized group, which was sometimes further subdivided for more individualized instruction or academic intervention. (To accommodate these logistics, one side of each classroom's desks faced the front wall while the other side faced the back; there were whiteboards and projectors front and back.) True whole class instruction was rare in the Greenfield model.

The smaller instructional groups were not merely a convenient byproduct of the SDL component; rather, they were an intentional part of the Greenfield design. Citing research that

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class size below a certain number (16-18 students) can have a significant impact on student learning, AF was eager to find a way to reduce the size of their instructional groups without actually limiting the number of students in the school. Smaller class size (or the equivalent thereof) in the new model enabled teachers to work more closely with students, give "more targeted, strategic feedback" (Interview 14), increase opportunities for student voice, and generally strengthen teacher-student relationships in ways that would not have been possible with a full group of 30 or more students.

Moreover, the smaller class size was designed to drive toward the "staff" portion of the "student, family, and staff motivation" outcome – while addressing the network's concerns around staff sustainability – in two key ways. First, to leverage this structure, Greenfield moved toward more departmentalized teaching in the elementary grades (i.e., a teacher taught only one or two subjects and then did so across multiple classes and/or grades, as opposed to teaching all subjects to one group of children, as is more typical in elementary school), which allowed teachers to focus on, and gain real expertise, in one or two content areas. Although this meant that each group of students interacted with more teachers than was the norm in a conventional elementary school, teachers felt it was worth it because they were not "pulled in a thousand different ways" (Interview 6). They had the mental capacity to intellectually prepare for each lesson, and they felt students learned more because of it – and that the goal coach provided something of a safety net so that students did not lose the sense of connectedness that comes from working closely with just one or two elementary school teachers. Additionally, this structure created an opportunity for more differentiated teacher roles, with the idea that more experienced teachers would primarily teach the large group classes (14-16 students), and less experienced teachers would facilitate SDL and smaller group lessons. Although logistics and

school-specific faculty dynamics did not always allow the staffing model to function exactly as designed, the structure did allow for a more gradual "on-ramp" for novice Greenfield teachers overall.

Expeditions

Expeditions was the fourth learning modality in AF's new school model, and many Greenfield players felt it presented a compelling opportunity to "unlock other passions within our kids" (Interview 3) beyond the scope of the academic and enrichment curricula. Originally, every eight weeks Greenfield schools took a two-week break from regular school programming for students to engage in learning beyond the classroom walls (this was quickly downshifted to three times a year because of the disruptive nature of expeditions, and because they were such a huge undertaking). Achievement First explained the rationale behind this component:

> By spending dedicated time going deep on real-world topics, students have an opportunity to extend and apply their knowledge and skills, expand their repertoire of word and world knowledge, and gain access to a robust set of life opportunities that will fuel their passion. (Achievement First & IDEO, 2014, p. 50)

Expeditions aimed to spark student interest and passion in new things, give students additional and varied opportunities to hone the habits of success, provide school-based time to "learn in different ways, get out into the world, build… content knowledge" (Interview 11), and, ideally, increase student investment in school.

Per the original vision of expeditions, a subset of the Greenfield design team was charged with the development *and* execution of the ambitious curriculum. This was due in part to the scope of expeditions, as well as to the initial idea that expeditions would be a time for teachers to "rotate off" for extra professional development (PD) and extra vacation – thereby addressing concerns about staff sustainability and motivation. The expeditions team, which also oversaw the Greenfield enrichment program, designed each expedition as well as built relationships with

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external partners and guest educators, and facilitated their respective roles in the expeditions. The team spent time in the Greenfield schools before and during each expeditions round, preparing and supporting teachers and staff as well as navigating the extensive web of logistics, including everything from ordering materials to scheduling field lessons to ensuring parent involvement.

As the Greenfield model evolved, the expeditions team altered its approach. First, it quickly became apparent that expeditions required all hands on deck, so much so that AF could not afford for teachers to "rotate off" during this time. Thus the design shifted to further incorporate teachers into the expeditions programming. Once Greenfield began to scale to additional campuses, the expeditions design shifted again, for two reasons. The expeditions designers could not physically be on site to support and facilitate multiple expeditions across campuses, often run concurrently. Therefore they needed to design the expeditions in a way that teachers could smoothly and independently implement them. In addition, because of various challenges in working with external partners (e.g., recruiting partners across multiple regions, partners struggling to work within the unique AF culture, etc.), the expeditions team had additional reason to double down on facilitation by teachers. With this in mind, designers worked to create an expeditions curriculum that could be led in-house by teachers with only light support from external partners and the expeditions team, rather than the other way around. Finally, the expeditions team also began to transition from designing modules that might simply be engaging and fun for students to modules that were deliberately crafted to spark interest in, and educate about, future careers – while still being engaging and fun. This transition was meant to push on the design anchor of ownership and personalization in that it encouraged students to

make substantive connections between school work and real-world work, and begin to identify the building blocks that might lead from one to the other.

The expeditions curriculum was wide-ranging and, beginning in third grade, students played a role in choosing their module through a matching system based on an application and ranked preferences. Offerings included mini-med school, hip-hop dance, birding, photojournalism, chess, theater, and neuroscience, to name just a few. Each two-week expedition concluded with a "showcase," a morning-long, school-wide event where families and guests could rotate among the different modules and learn about students' experiences. Students gave performances and presentations, and found numerous ways to show off their learning and share a taste of the process that resulted in this culminating moment. The atmosphere at the showcase was celebratory, with high levels of engagement from students, families, and staff. It was a compelling example of the awesomely powerful community that AF was driving toward with Greenfield.

Not surprisingly, students often cited expeditions as their favorite part of the new school model. My experience chaperoning a day trip with the fifth and sixth grade Acting Expedition to a nearby, acclaimed regional theater, gave a good illustration of why:

> Most students say they have never been to a professional theater and, for those who have, I get the sense this is their first time touring the theater and getting a sense of the different components, backstage, etc. There is a fair amount of technical vocabulary used and introduced (e.g., blocking, greenroom) that students seem to soak up easily… I am impressed by students' enthusiasm and curiosity (sometimes in spite of themselves – I can tell it's hard for some of these grade 6 students to let themselves appear curious and enthusiastic), as well as by their determination and teamwork. This particular expedition experience seems to capture a lot of what Greenfield is going for. Students' sparks are clearly ignited; they have plenty of opportunities for organic (and necessary) collaboration, and use them well; they are intrinsically motivated by the process in which they're participating and by the showcase product (authentic, public) they're working toward – no extrinsic rewards, or behavioral reminders, narrations, or consequences are ever mentioned. Moreover, although the day is structured, several chunks are planned in a way that the work is truly student-directed, particularly the 90-minute rehearsals which

are largely in students' hands, albeit with suggestions and occasional guidance from teachers. To hear and feel the shared, palpable enthusiasm across the room – teachers' and students' enthusiasm – is pretty priceless. (Memo, January 2018)

This expeditions-specific combination of authentic purpose, choice and ownership, challenge, and genuine interest in the content, was a winning one for students.

Teachers and staff, however, saw upsides and downsides to expeditions. There seemed to be general consensus that this element was of great value to students, and that it was designed to address student needs in ways that were unique within the Greenfield model – and unmatched in AF Classic schools. One interviewee characterized the expeditions concept as "wildly exciting" because he felt AF was addressing something that had previously been missing from its model, not only in the types of learning expeditions incorporated, but also because of the degree of student choice (Interview 13). Other actors noted that the opportunities and general exposure expeditions provided closed "real equity gaps" and had the potential for "far reaching effects" for students (Interview 4). Teachers who designed and led their own expeditions spoke to the joy they found in designing the module and incorporating their passion into the curriculum. "It just reinvigorates my teaching spirit," said one teacher (Interview 5). But the two-week pause in regular instruction was highly disruptive for the school, and felt like even more work for teachers. Although they saw the benefit for students, some wondered if the challenges that accompanied expeditions were worth it.

Nevertheless, expeditions was a critical component of Greenfield, largely because it addressed multiple essential outcomes and motivating factors, and aligned closely with design anchors. It provided opportunities to develop habits of success and accelerate academics in a unique context that transcended the limits of the classroom and core curriculum. It brought together small and large communities in purposeful, powerful ways. It gave students far more

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authentic choice and voice in their learning, particularly in the upper grades, than they experienced elsewhere in the school model. And, expeditions infused a distinctive blend of joy and rigor into Greenfield that tapped multiple motivating factors. The learning and experiences derived from expeditions had the potential to help AF "do better" by students and families, push the organization to the forefront of school reform, increase educational equity, and, eventually, impact students' ability to succeed in college.

Enrichment

Just as expeditions was structured to be a regular part of students' Greenfield school experience, so too was the enrichment component. Unlike most traditional schools, enrichment in Greenfield was considered, as one actor emphasized, "not just an add-on… [it's] a major part of their [students'] education" (Fieldnotes, July 2017). According to the original vision and design of the component, students had two 40-minute blocks of enrichment daily, year-round. Offerings varied across Greenfield campuses, but typically included one STEM-related class, one sports-related class, and two courses in the arts; one Greenfield school, for example, offered coding/robotics, band, dance, and sports. Older students (grades 3-6) chose their two enrichment classes and were expected to stick with those choices long-term, across grades, unless they had a compelling reason to change. In fact, the process of selecting enrichment classes was itself meaningful and unique to Greenfield. One interviewee explained:

> I think enrichment is another place where they [students] actually get to advocate for themselves. They really have to spar with [the dean] about, "Well, why is this the right… enrichment for me? Why do I want to do it? How committed am I going to be?" In some places, that goes back and forth of them having to meet with different enrichment teachers and really finding the right spot for kids. (Interview 2)

The content of the enrichment classes, as well as the dedication they required, was meant to teach students "real-life skills and just how to find something you love and commit to it" (Interview 11).

Similar to expeditions, students were highly invested in enrichment, as were teachers and families. It seemed to be an area around which everyone could rally and embrace the multiple short-term and long-term benefits for students. On a day-to-day basis, students had a chance to spark and cultivate non-academic passions and, because of the frequency and quality of enrichment classes – and the continuity across years – build expertise in specific areas. This stoked students' motivation and investment in school and enriched their minds and lives. For some students who struggled to find success in other areas of school, enrichment was particularly instrumental to their investment in school, as evidenced by my observation of a combined third and fourth grade band class:

> A third grade student whom I usually see struggling with behavior [outside of this class] is one of those receiving help to get his clarinet put together and begin positioning his fingers and mouth properly so he can sound his first notes. In this moment, this child exudes discipline, joy, and patience. He listens carefully to the teacher and to his fourth grade helper student, and works with his neighbor as they try to figure out their clarinets. (Fieldnotes, December 2017)

The scope of the enrichment program also enabled students to strive for long-term enrichment goals that could be tackled, at least in part, in the school environment. For instance, some Greenfield actors spoke of aspirations for students that could result from developing their musical talent, such as earning college music scholarships or passing college music auditions. In light of moments like the one described above, which were not infrequent in enrichment classes, such aspirations seemed entirely possible.

Knowing that enrichment often was omitted or deprioritized in low-income school systems due to budget cuts and state testing demands, AF was committed to setting a high bar for

enrichment in its new model, both in terms of the amount of time devoted and the quality of that time. In this sense, enrichment was a way to address questions of access and equity, making sure Greenfield students had the types of opportunities their more affluent or White peers would take for granted. Furthermore, providing these opportunities for students was seen as another vehicle to accelerate expectations, strengthen community, and increase students' ownership over their education.

Yet the enactment of the enrichment component diverged somewhat from its original vision and design. For example, although AF expressed an equal commitment to high quality academics *and* enrichment, the latter always played second fiddle. During the ramp-up to state testing, or if students simply needed extra academic support, they were often pulled for academic intervention during enrichment blocks. There was only so much time in the day and, despite professing otherwise, AF's actions implied that – even within Greenfield – academics trumped enrichment. Similarly, at the time of this writing, in order to accommodate a schedule shift, Greenfield school leaders were given the option to continue with the original design for two 40-minute enrichment blocks daily, or downshift to a single, though slightly longer, enrichment block daily. This, too, signified enrichment's lower ranking among the essential outcomes for Greenfield.

Nevertheless, the enactment of enrichment, though it slightly reduced the power of this element as a critical piece of the Greenfield puzzle, did by no means annul its impact. The high quality of enrichment classes persisted, primarily because of the caliber of enrichment teachers that AF hired for Greenfield. Students' joy and intrinsic motivation were palpable in enrichment classes, as were the impressive benchmarks they hit with their learning. Greenfield enrichment

still addressed the motivating factors, essential outcomes, and design anchors that AF set out to achieve, just in a compromised manner.

Network-Wide Components

It would be remiss to describe as the "central components" of a novel school model only its new elements. Whatever elements lingered from the pre-existing model, if they were integral to the design and execution of the novel school model, would then constitute central components as well. In the case of AF, as mentioned in Chapter IV, there were certain components from the AF playbook that were grandfathered in to the Greenfield model. Despite their often-implicit place in the new model, these elements had a strong presence. They were critical pieces of the new design because they were critical pieces of AF schools, period; these elements were, in many ways, foundational building blocks for these schools. Here, I provide a brief sketch of these network-wide components: academics and assessment, coaching and data-driven instruction, student culture systems, and operations. I then elaborate on their role – often unacknowledged – in gluing together the new model's novel components.

Academics and Assessment

Across the AF network, all schools, Classic and Greenfield, used a similar approach to student academics and assessment. These were two key anchors in AF's strong educational infrastructure, the alignment of which was crucial to its success (per my earlier discussion in the literature review) and therefore a logical carry-over to Greenfield. Curriculum matched assessment, which, in turn, aligned with a third key anchor, teachers' professional development, thus providing cornerstones for the educational infrastructure of AF schools.

Although the academic program in Greenfield schools differed somewhat from its AF Classic counterparts, there were distinct commonalities in the approach to teaching and learning.

Particular teacher-led portions of the Greenfield program, for example, such as large-group

instruction for writing, math, and much of close reading, used a combination of direct instruction

and ample time for students to practice skills independently and receive teacher feedback. This

observation of a math lesson reflected typical upper grade math instruction:

> Math begins with a "think about it" (TAI) problem. One student reads the problem
> aloud, and all follow along and annotate. The teacher reminds students of what he's
> written on the board:
>
> $$\text{numeric expression} \quad - \quad \text{equation}$$
> $$5 \times 2 = 10$$
> $$\text{factor} \quad \text{product}$$
> $$\text{answer}$$
>
> Students have 30 seconds to write an equation (30 seconds per equation) for each of the
> three TAI bullets, then they do a whole-group share with students silently agreeing and
> disagreeing with their peers. Students turn and talk for the next part of the problem, and
> the teacher goes on to unbundle the entire problem, guiding students through it one piece
> at a time and having them briefly explain their responses… Next, students move into the
> "introduction to new material," during which time they work independently, often in
> short bursts of about one minute. They do a whole-group share, and the teacher says the
> key points, which students write in their notes. He reminds students of the importance of
> the process, more than the product, in math. So, he says, they must show their work, and
> here they must use the prescribed steps (e.g., compare factors to one). As students
> continue working, the teacher circulates actively, checking answers and prompting with
> "How do you know?" and "Why?' He continually emphasizes that he must see "proofs."
> Students transition to seven minutes of partner work, during which they work together on
> several problems. They then do about ten minutes of completely independent work, and
> finish with five minutes for an exit ticket, which they turn in to the teacher.
> (Fieldnotes, January 2018)

Greenfield-specific curriculum was, like the AF Classic curriculum, aligned with Common Core

and with state tests (slightly adapted to fit region-specific state tests, as needed), and with an eye

toward high school Advanced Placement coursework. The academic program focused primarily

on individual product and process, with most collaboration – with the exception of expeditions –

limited to brief, structured partner work or "turn-and-talks." Outside of science labs and

expeditions projects, the majority of student work was written, as opposed to incorporating

hands-on learning. The backbone of the academic program was nearly identical across the two AF school models.

The content of the Greenfield curriculum varied relative to that of AF Classic. Some parts were imported wholesale from AF Classic, such as the writing curriculum in the primary grades, or the approach to guided reading across all grades. Other parts of the curriculum were designed specifically for Greenfield, such as the science, math, close reading and humanities programs, though portions of those curricula sometimes borrowed or were built from AF Classic materials. These curricula were designed to fit within Greenfield's unique structure (e.g., a teacher-led block and an SDL block), to be standards- and mastery-based – aided by the paceline platform – and, often, to be more rigorous than AF Classic academics. Like AF Classic, Greenfield had a team of curriculum designers (catering only to Greenfield schools) who wrote the curriculum, then facilitated staff training sessions to support implementation. Using the same practices as the rest of the network, the Greenfield design team provided every aspect of the curriculum for teachers – subject- and grade-specific "fundamentals of instruction," scope and sequences, curriculum units, lesson plans, SDL modules, and all other resources. Of the decision to have a separate team design the curriculum rather than teachers designing it themselves, a Greenfield player said, "I think they were like, 'We've learned this [works], so we should start Greenfield with that in place'" (Interview 19).

Greenfield-specific curriculum, just like AF Classic curriculum, was aligned with student assessment. The Greenfield design team wrote assessments to match the curriculum, including weekly quizzes, SDL end-of-module assessments, and more conventional unit assessments and performance tasks. Because Greenfield students took the same standardized tests as their AF Classic peers, they also took the same internally designed (by the AF network) interim

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assessments. Similar to other backbone elements of the academic program, these interim

assessments were proven to inform instruction and support student achievement, as well as to

provide common data points for all AF schools to measure their students' progress throughout

the year. Thus, despite relevant curriculum-specific differences in the substance of particular

Greenfield assessments, the principles behind their design and use corresponded with network-

wide practices.

Coaching and Data-Driven Instruction

Systematic coaching, along with data-driven instructional (DDI) practices that bridged

student instruction, assessment, and professional development for teachers and leaders, were

bedrocks of AF Classic schools. They quickly and organically became bedrocks of Greenfield

schools, too. All Greenfield players, from teachers to leaders to designers, received personalized

coaching. Although the substance of coaching meetings and feedback was tailored to each

coachee and therefore might be more or less Greenfield-specific (depending on the context), the

coaching protocols and methods themselves were uniform across the AF network. Similarly,

ongoing PD occurred in Greenfield schools exactly as it did in AF Classic schools, with an

intense multi-week summer training schedule followed by weekly Friday afternoon PD sessions

and occasional full-day PD days interspersed throughout the year. The PD content areas were

consistent as well, delving into student curriculum, along with regular analysis of student

assessment data used to inform instructional planning, and continually revisiting and, as needed,

strengthening student and adult culture. Again, some Greenfield-specific components, such as

SDL or expeditions or particular curriculum, warranted Greenfield-specific PD, but much of the

substance held constant network-wide.

Just as the general approach to coaching and data-driven instruction was constant across the network, so, too, were the mindsets and values associated with these structures. For example, PD and coaching in Greenfield schools leveraged a strong adult culture of openness to feedback and desire for authentic practice to build skill. This culture was carefully fostered by the organization because it was seen as crucial to adult learning and improvement – and therefore crucial to student achievement. Other values, such as the "concept of we link arms and we're stronger together and… an overall team orientation," as well as "attentiveness to results" (Interview 22), also were deeply ingrained and seen as critical to "doing school," whether in Greenfield or otherwise. The coaching and DDI systems, like elements of academics and assessment, were simply seen as "good practice." As one interviewee summarized, "I think that was definitely the mindset going in [to Greenfield]; that so much of the learning they [AF] had done was going to help Greenfield be more successful" (Interview 19).

Student Culture Systems

A third element imported directly from the AF playbook to Greenfield was the approach to student culture. As described in Chapter IV, adopting AF Classic student culture systems was not assumed in the same way that practices were automatically adopted for student academics and assessment, or for coaching and DDI. But adopting these culture practices was quickly seen as necessary to building a strong "foundational culture" for Greenfield. (Adopting these "core culture" systems, particularly a highly specified, extrinsically based student behavior system, was a conscious decision resulting from the large-scale pilots of Greenfield in kindergarten, fifth and sixth grade. At that time there was an attempt to approach student culture differently, which most players felt backfired and discouraged teachers and staff, causing a swift return to the known culture systems of AF Classic.) Tight behavioral expectations were explicitly taught to

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students in the first weeks of school and closely reinforced thereafter, with the logic that students and teachers could then focus more on the business of teaching and learning. There was a discipline system with set rewards for positive behaviors and consequences for negative behaviors, which provided guardrails for the behavioral expectations. In the name of efficiency and safety, students practiced procedures, such as how to line up and transition from classroom to lunchroom, until they were routinized. In addition, the classroom management skills that supported the student culture systems, and accompanying teacher relationship-building skills with students and families, were codified and incorporated into coaching and PD.

Analogous to the rationale for grandfathering in to Greenfield the network-wide components named above, the incorporation of AF student culture systems was seen as an example of Greenfield schools leveraging something that many players felt were best practices. One interviewee explained, "The reality is I do believe that Achievement First and other similar schools have built up a body of knowledge of how to do the foundational culture relatively well" (Interview 21). Another interviewee reflected on the role of inherited understanding at play:

> Part of it I think is these are all people who have been at AF for a long time so there's this sense of to them, they think this can work… they feel this is the vision they've been taught, the playbook they've been given… this is how you do this. (Interview 26)

In the eyes of some – though certainly not all – Greenfield actors, the AF playbook for student culture systems was yet another building block that simply had to be in place if the model were to successfully achieve its goals.

Operations

Achievement First had developed a finely tuned system for the operational side of starting and managing successful schools, and the system was considered fundamental to the

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execution of a new school model. Every AF school had its own operations team, led by a director of operations who removed from the principal's plate most of the non-instructional responsibilities that can consume a principal's time (Achievement First, 2019b). These functions included "everything from bus scheduling and facilities management to finances and attendance analysis" (n.p.) and permitted school leaders to focus on supporting the nitty-gritty of teaching and learning (e.g., conducting observations, coaching teachers, analyzing data, leading PD, and so forth). At the network level, there were additional operations-oriented teams, overseeing areas such as human resources, facilities and finances, information technology, and teacher, leader, and staff recruitment for all AF schools. As with the school-level operations team, the network level teams handled "core functions needed to run great schools" and helped "capture, centralize and share best practices," thereby, again, allowing school leaders to "focus exclusively on teaching and learning" (Achievement First, 2019a, n.p.).

Similar to the other central components Greenfield adopted from the AF playbook, the approach to operations aligned between Greenfield and Classic schools. The practices and substance of the operations work were nearly identical across all AF schools, save a few additions warranted by Greenfield-specific structures such as SDL (e.g., a member of the Greenfield operations team managed all of the technology that accompanied this component). Greenfield actors were unequivocally grateful for the school and network-level operations teams, and felt that they played a significant role in launching a novel school model. One interviewee said:

> [T]here's a lot of this work that we don't have to think about. I can put a lot of my thought and energy into SDL and social-emotional learning and goal teams, because I don't have to think about how do I recruit teachers or what's the payroll system… There are just a lot of questions that are answered, which allows for more innovation on the fronts where we haven't answered the questions. (Interview 25)

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The capacity and experience of the respective operations teams, the fact that AF as a whole was "operationally sound" and that the members of these teams "know what it takes to get… [things] done and then they follow that formula" (Interview 18), provided another cornerstone for the Greenfield model.

Challenges of Layering

Achievement First initiated the Greenfield Project with the intention of designing a completely novel model fueled by "greenfield" thinking. What resulted from the design process, however, was a school model with a layer of novel components cobbled onto a layer of existing components. This layering occurred for reasons similar to those that created tension between AF's approach to and its ambition for Greenfield. The persistence of inherited individual and organizational understandings of "doing school," for instance, made it difficult to fully discard the design of AF's Classic model. The complexity and uncertainty of the new design, stemming from its novelty, the specifics of its design, and its existence within a familiar, well-established context, exacerbated the difficulty of straying from AF Classic and created a learning imperative for coping with this difficulty. This learning imperative warranted new modes of learning – which, in turn, were inhibited by the very inherited conditions with which Greenfield actors were laden in the first place.

In the following sections, I apply these three lenses to unpack why Greenfield actors (knowingly and unknowingly) merged and layered model-specific and network-wide components. In doing so, and in teasing out how this merging manifested in the design of Greenfield, a significant pattern begins to appear. This pattern builds on the framework established in the previous chapter, and underscores the perpetual friction between AF's approach to and its goals for Greenfield – friction that, we now see, materialized in the

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construction of the model *and* in the development of its design. Neither dimension of Greenfield's innovation journey invited a top-down, linear approach, but that is what both received, and it muddied the Greenfield waters considerably.

Inherited Conditions

On paper, the Greenfield blueprint seemed a significant departure from the design of AF Classic schools, and therefore a different way of "doing school." In the process of developing a novel school model, AF designated specific outcomes that it sought to achieve, as well as unique anchors to guide its design. In response to these essential outcomes and design anchors, AF settled on five interrelated pieces that would form the basis of the Greenfield model: goal team and dream team, self-directed learning (in conjunction with small-group and large-group learning), expeditions, and enrichment. These elements were widely seen as the sole, central elements of the model, so much so that, when asked in formal interviews, "What are the key components of this model?" every single interviewee responded by describing only the novel Greenfield components. Indeed, these elements, in isolation and especially in combination, *were* novel – for AF and for any traditional school – and had the potential to set a different course for "doing school."

But these novel Greenfield components were not formed in a vacuum, a crucial point that seemed largely overlooked by Greenfield players, and to which this section pays close attention. The Greenfield-specific components were designed and fleshed out by stakeholders who often had considerable experience with the traditional AF model (or comparable school models), and enacted by actors who tended to be well versed in the AF playbook. Moreover, these developing components were nested within the familiar context of the AF Classic model. In light of these circumstances, there was bound to be instinctive reliance – conscious or unconscious – on the

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previously existing components that had anchored AF's traditional schools. Here, I highlight examples of that instinctive reliance, and trace its impact on the Greenfield design.

Inherited individual understandings. Just as Greenfield actors charged with constructing the Greenfield model brought with them inherited individual understandings of student culture and instruction, so, too, did those actors charged with developing the model's design. Despite the prevalent feeling that – in light of the specifications of the initial Greenfield blueprint – designers would have to "build this thing from scratch" (Interview 10), such wholly unconstrained, ground-up development was, to some extent, impossible because the designers themselves were not starting from scratch. Knowingly or not, they were often incorporating curricular and pedagogical practices into Greenfield from what they had learned or done previously. The design team members writing curriculum, for example, may have delved into some new content (e.g., topics of study for the new humanities curriculum) or utilized different lesson structures (e.g., the 5E model in science instruction), but the product usually resembled the curriculum of AF Classic, binding together elements old and new. Moreover, because curriculum designers continually engaged in trial-and-error testing of Greenfield curriculum, regularly observing teachers implement it and, when useful, seeking teachers' and leaders' feedback, their ideas about further elaborating or refining the curriculum were shaped, in part, by early implementation. And, of course, the curriculum was implemented by teachers well acquainted with the AF Classic curriculum (or something similar). Thus, the processes of developing new curriculum and fleshing out new design components were continually mired in understandings that actors brought with them to this work.

Although one might argue that inherited understandings of learning and teaching or student culture could conceivably support novel designs – and indeed, under certain

circumstances, that might be true – I contend that here they collided. For example, the SDL component of Greenfield, as previously described, was envisioned in the blueprint as a truly self-guided time where students could choose what content to tackle and how quickly to move through it. The initial design aimed to make this vision true, but designers quickly backtracked. The subsequent SDL design reflected critical understandings of teaching and learning that designers, teachers, and leaders carried with them, such as: dictating for students what content to engage in, when, and how fast; prescribing for students how they should process and demonstrate their learning; and characterizing students' work as sub-par, proficient, or advanced. When implemented, SDL functioned more as a heavily teacher-monitored independent practice block, rather than one in which students directed their own learning. The freedom that true self-guided learning necessitated directly contradicted the teacher-controlled patterns of teaching and learning to which most Greenfield actors were accustomed. It was not feasible to do both, so the design of SDL slipped back toward the familiar, and became something of a hybrid of the new and the old.

Inherited organizational understandings. It was not only inherited individual understandings of "doing school" that yielded a layered and often hybrid Greenfield design; inherited organizational understandings played a role as well. To be sure, there were instances where the layering of new onto old meant the latter could serve as a foundation for the former. The incorporation of AF's approach to operations provides a strong example of this. The organization had determined a thoughtful, efficient way to run the day-to-day and long-term operations of its schools. It distributed non-instructional tasks between school-level and network operations teams so that school leaders were free to focus their attention on the business of teaching and learning. Adopting this approach to operations for the Greenfield Project, even if

done so reflexively, was harmless; the approach was prudent for the management of any school model, particularly one located within a well-established network. Moreover, given the strength of AF's operations knowledge, incorporating this element into the Greenfield design proved enabling, giving Greenfield constituents capacity that allowed them to focus on implementing a new school model. Thus, some elements of the AF Classic model, reflecting organizational understandings of "doing school," *could* successfully merge with new Greenfield elements.

For the most part, however, inherited organizational understandings produced friction between new and old design elements. This friction was perhaps most apparent in the attempt to merge elements of AF's approach to academics with Greenfield's goal of cultivating habits of success through instructional blocks, and triggered especially by the presence of AF's traditional student culture systems within the new model. One interviewee, for example, spoke to the impact of a widespread focus on control and individual achievement in the AF student culture systems, noting that this hindered the cultivation of certain habits of success that required "risk-taking and agency," and made it "harder to build a community because you just feel you're only fending for yourself" (Interview 4). Another interviewee elaborated:

> It's [student culture's] very tightly managed in ways that don't actually represent to me this big aspiration of kids being self-sufficient, self-directed, having autonomy, being super motivated. At the end of the day, the discipline overtakes a lot of the felt experience for kids, which is one of adults controlling precisely what I do, when I do it, how I do it. Sometimes… I might not even have a chance to talk. I'm just receiving information. I'm doing a task by myself. It feels a little weird to me, I feel in conflict with what ultimately kids are going to have to do in the world, which is be a little more self-sufficient… It doesn't make sense to me. (Interview 26)

It is important to recognize that this perspective was not unanimous. As mentioned earlier, some Greenfield players felt that the AF student culture systems were necessary to enable the goals of the new model, and, when implemented effectively, were fully capable of doing so. It was a matter of determining "how to leverage… them to accomplish our end goal" (Interview

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17). This was no small matter, though; it was difficult, at best, to leverage systems to accomplish an end goal when the systems were seemingly antithetical to that goal. Thus, my findings surfaced general friction in this layering of Greenfield-specific structures and goals on top of existing AF Classic components, most glaringly in the context of student culture.

Learning Imperative

The complexity and uncertainty surrounding Greenfield's design, and surrounding the process Greenfield actors enacted to elaborate and refine the design, rendered the design vulnerable to layering and fusing the old and the new. Such complexity and uncertainty are inherent to the developmental period of the innovation journey (Van de Ven, Polley, Garud, and Venkataraman, 2008), and Greenfield was no exception.

In this section, I explain how the ideas for Greenfield's design, which seemed simple and clear-cut when initially constructed, suddenly proliferated and become complicated at this stage of the innovation journey. I describe how the context in which development occurred further complicated things. And, I clarify how the ambiguity of determining the most fruitful path forward for aspects of the design (Van de Ven et al., 2008), along with continual shifts in the design and criteria for success, as well as the lack of experience of the designers in developing something innovative, added up to form considerable uncertainty. These features, I conclude, produced a learning imperative, because they created circumstances unlike anything AF had experienced, which therefore could not be navigated with the same learning tools AF had used in the past.

Novelty and uncertainty. Similar to the novelty of initiating and constructing a new model, developing the design of the model was itself a novel process, and one that thereby elicited uncertainty. For instance, there was no exemplar for the Greenfield design. Select

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elements, such as expeditions and SDL, certainly bore resemblance to components in existing schools across the country from which they were loosely derived. But no school model existed that reflected the full scope of Greenfield's design, so there was no place for designers to turn to determine how to flesh out a certain component, or how to fit together particular components.

In addition, there was little know-how of what, exactly, these novel design components should look like once complete. The design was not precisely defined and, while designers might have experience, say, developing or enacting social-emotional learning practices, they had no experience developing *these* social-emotional learning practices (e.g., the practices embedded in goal team) in *this* context, because this was new. Van de Ven et al. (2008) summarize this challenge: "[A]lthough technically competent, [designers] typically lacked experience in developing an innovation" (p. 44). This mattered.

The essential outcome of "habits of success" illustrates this conundrum well. Although the goal of building these habits in students by infusing them across the school day was clearly defined, there was no real knowledge or plan for how to achieve this outcome. All of AF's previous soft skill or character-type work was driven by extrinsic, teacher-directed systems, and very much secondary to the hard skills of academics. Therefore, the majority of the Greenfield actors themselves had no experience with the design or enactment of something that could achieve the habits of success outcome as intended. They had to figure out the design as they went, and do so with no guidance or support. In the midst of such uncertainty, Greenfield players leaned on what they knew (inherited understandings) and layered the habits of success outcome on top of the existing structures and practices – none of which had been developed to achieve these particular habits, and some of which were actually antithetical to this goal.

Complexity of the model. The impetus to layer model-specific components onto network-wide components was compounded by two types of design complexity: the complexity of the model itself, and the complexity of managing the design process. As described in the previous chapter, the design of Greenfield was complex in that it was responsive to multiple motivating factors, and therefore was attempting to address many things at once. Moreover, aspects of the design were interdependent. Therefore, as designers elaborated on and refined the design of one element or sub-element, the change could – and often did – ripple across the design. The design was also complex in that it was underdeveloped. Designers, teachers, and leaders began only with a general blueprint; from the get-go the Greenfield-specific elements were crafted to comprise the skeleton of the new model, and everything else had to be filled in. Ye there was little detail or information to flesh out the various elements of the design – hence the impression that early Greenfield actors would have to "build this thing from scratch" (Interview 10).

An additional feature of the design's complexity was the fact that certain components, although meant to be interdependent, or at least interconnected, with other components, were actually discrete. For example, the primary social-emotional learning components – habits of success, goal team, and dream team – were intended to be infused throughout the school day, but were actually designed as discrete structures. Similarly, expeditions were designed as a discrete part of the school year, where much of the substance of school (e.g., teaching, learning, culture, physical space) was different, and little carried over once regular instruction and daily school schedules resumed.

Managing a complicated process. Complexity within the design of the model was further complicated by challenges in the *process* of developing the design, particularly the

challenge of the new among the old. For example, at the school level, new, Greenfield-specific components were designed and placed side-by-side with old, AF Classic-specific components. Even if that was not the intended design, it was the design that resulted, and it often yielded friction. At the network level, the new Greenfield design was built and tested side-by-side with the old AF Classic design. Thus, even though AF made a point of establishing a separate design team, and intentionally tried to put a "big firewall up between Classic and Greenfield" (Interview 21) to prevent the Classic design from influencing or bleeding into the Greenfield design, the reality of the new nested among the old remained. It was a feature that contributed to the complexity of the work, and that contributed to a layered design.

An emerging learning imperative. The combination of uncertainty and complexity, endemic to innovation, was bound to yield something messy. Messiness, in turn, established a learning imperative, one that AF struggled to meet. From this perspective, the resulting design – layered and hybrid rather than pure and uniform – was less surprising. Just as uncertainty and complexity did not lend themselves to the rational, linear planning processes AF employed to initiate and construct Greenfield, neither did they lend themselves to a tidy, innovative design fully distinct from AF's Classic model.

Inherited Modes of Learning

The learning imperative established by the uncertainty and complexity embedded in the development of Greenfield's design suggested a different path than the one AF took. I use this section to sketch AF's learning path, and to juxtapose it with an alternative path that might have more adequately met this learning imperative. I then illustrate the consequences of this learning gap, deliberately echoing similar challenges that flared in Greenfield's earlier construction phase as a result of AF's reliance on inherited modes of learning.

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Cycles of learning. Van de Ven et al. (2008) write, "A… realistic view of innovation should begin with an appreciation of the physiological limitations of human beings, among them a limited ability to handle complexity" (p. 13). The complexity AF experienced in developing the nuts and bolts of Greenfield's design was not unique, nor were players' responses to this complexity unique; both are common with innovation. Van de Ven et al. go on to explain that, because of humans' limited ability to handle complexity, part of innovation is successfully navigating this challenge, as well as managing the uncertainty that accompanies it. In order to do so, the authors suggest a "nonlinear cycle of convergent and divergent activities that may repeat over time and at different organizational levels" (p. 16). As discussed previously, however, such a cycle ran against the grain of AF's inherited mode of learning, which relied heavily on convergent activities. Achievement First's inheritance thereby prevented it from engaging in the very type of learning that could more adeptly address other inherited conditions, as well as manage uncertainty and complexity – which, in turn, maximized the chances of creating a design that layered the old and the new.

Incorporating divergent activities was critical to the elaboration and refinement of all parts of Greenfield's design, but especially so for elements intended to look far different from the AF Classic model. For example, the very notion of paying equal attention to academics and enrichment required a distinct mindset shift for Greenfield actors. So, too, did the concepts of students directing their own learning, and of authentically cultivating social-emotional growth via the habits of success. Yet these mindset shifts were neither acknowledged nor explicitly managed. There were few opportunities for school leaders and teachers to explore what it might mean to make these mindset shifts, or, through "learning by discovery" (Van de Ven et al., 2008, p. 185), to pursue teaching and learning in a radically different way. Nor was there an embrace

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of the "requisite variety of diverse perspectives necessary to make uncertain and ambiguous innovation decisions" (p. 14). Van de Ven et al. emphasize, "Although a homogenous structure of power and leadership is efficient for well-understood tasks, it tends to squelch consideration of diverse and opposing viewpoints that are inherent in ambiguous tasks" (p. 14).

Yet AF was already invested in efficient, top-down leadership and dissemination of new features in its model. The elaboration and refinement of its Greenfield design, then, followed a similar pattern. There was no encouragement for teachers and leaders to muck around with the novel components or sub-components, or to experiment and tinker with ideas for the nuts and bolts of the design. In turn, there was minimal input on design and few design iterations from teachers and, especially, from families and students. Instead, the focus was on top-down trial-and-error testing that would quickly get the design "right" and then disseminate it.

Consequences. This focus on convergent learning, rather than divergent learning, resulted in two consequences for the Greenfield model. First, the Greenfield-specific components often evolved to a diluted form with greater structure – one that more closely resembled principles and underlying layers of the AF Classic design. For instance, the SDL component transitioned from a self-guided block with broad opportunities for student choice, to a time where nearly every aspect of student learning was structured and dictated by adults. Similarly, dream team and goal team lost certain features and gained others so that they would be more streamlined, more defined, and more accessible to those charged with implementing them. The design of enrichment and expeditions, while still exciting and robust, also began to list toward that which was familiar to Greenfield players from their previous experience. Although Greenfield players often spoke of taking aspects of AF Classic and "Greenfield-izing" them, the

reality was closer to the opposite: "Classic-izing" aspects of Greenfield. Thus, these novel elements of the Greenfield design became less novel as they were fleshed out and refined.

The second consequence of this emphasis on convergent, rather than divergent, learning, was the attempted fusing of two distinct sets of components, one specific to Greenfield and the other general to the AF network. This yielded two outcomes. One, less common but present nonetheless, was the successful bootstrapping of certain novel components onto previously existing components, with the latter serving as foundation to the former. The second outcome was direct friction between the old and the new.

Several concerns arose as a result of this friction. There was a feeling that Greenfield players were implementing the novel components of the model in a discrete manner with little connection to the design anchors and essential outcomes driving them. One actor acknowledged, "We're just haphazardly doing some of this stuff, because we're supposed to do it, but we're not being as thoughtful and/or systematic about what the impact is" (Interview 2). For instance, a goal coach might facilitate her goal team time in the manner prescribed (conducting Circle, doing goal-setting, etc.), but fail to create a strong sense of community, or to authentically infuse the social-emotional work from goal team into other parts of the school day. The structure was in place, but if not maximized as part of a coherent whole, the spirit of the work might be diminished.

Another concern, derived from both the layering of new and old components as well as the aforementioned modifying of the novel components, was the potential erosion of the Greenfield model – its design, its outcomes – writ large. There was widespread unease that Greenfield would become (or was already becoming) "AF Classic with a twist" (Interview 2) or a "2.0" version of the AF Classic model (Interview 27), which was not at all the original intent

behind the design. Players felt that the approach of, "Okay, we're just going to layer [new structures] on top of our own—what we know works" (Interview 27) was not a recipe for success. It reduced the effectiveness of the Greenfield-specific components *and*, in some cases, the effectiveness of network-wide components; it also potentially "muted the outcomes" (Interview 4) deemed essential to Greenfield.

Goal team effectively illustrates this concern of erosion. A goal coach and his goal team members might experience conflicting messages during Circle due to the merging of disparate student culture practices, or to the watering down of Greenfield-specific practices. (One could argue that the merging caused watering down, or vice-versa; cause and effect often became blurry and cyclical under these circumstances.) Circle was supposed to be about relationship- and community-building, as well as nurturing habits of success. Yet if elements of the lingering AF Classic behavior system, such as rewards or consequences, were incorporated (as was sometimes the case) for behaviors exhibited during Circle, this might weaken the value of both the behavior system and the Circle ritual – and therefore prevent achievement of the desired objectives of this structure. One interviewee summarized, "We can't keep doing what we're doing and then still incorporate these [new] parts" (Interview 5).

Conclusion

The struggles AF faced in developing its Greenfield design mimicked those that constrained the construction of the model in the first place. Inherited conditions saddled Greenfield actors considerably. They instinctively relied on their inherited understandings of student culture and instruction, coaching and PD, and operations, either consciously incorporating these ways of "doing school" into the Greenfield design, or unconsciously drifting toward the familiar. The uncertainty and complexity of fleshing out the design – features

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inherent to innovation – complicated the work and created a learning imperative, yet further inclined actors to lean on their inherited understandings rather than heed that imperative (i.e., when things get difficult and uncertain, go back to what you know). Managing these factors suggested equal parts convergent and divergent learning, likely with an extra dose of the latter. But AF clung to its inherited behaviors of convergent learning, thereby hindering the successful management of these challenging factors.

Furthermore, there was an absence of explicitly confronting and managing the diluting and layering of two distinct sets of components. There seems to have been little discussion of which network-wide components would stay and which would go. There was minimal talk of how, exactly, to merge and manage the old stuff with the new stuff, or of how to preserve the original vision and goals for the design while elaborating and refining it. And again, there was little attention given to tackling the power of individual and organizational inherited understandings, and managing the uncertainty and complexity surrounding the work, in order to minimize their impact on the Greenfield design. In the absence of such dialogue, pieces of the new and old models were cobbled together in largely passive ways; it just happened.

In the next chapter, I move from the development of Greenfield's design to its animation. I trace the path produced by tensions between ambition and approach, and between the old and the new. I examine how street-level actors – teachers and school leaders – coped with this path, and discern the consequences of their actions.

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CHAPTER VI

Findings: Animating the Model in Practice

Thus far, I have established how one organization, Achievement First (AF), navigated constructing a novel, whole school model without the professional knowledge base, formal preparation, or precedent to do so. I also have scrutinized the development of the design for this school model, and the layering, blending, and colliding of old and new that resulted. In analyzing the construction and design of the Greenfield model, I have illustrated the tensions and challenges that arose from attempting an inevitably complex and uncertain innovation journey while burdened with inherited understandings of "doing school" and inherited modes of learning. Now, I turn to the subsequent phase of this innovation journey – implementation – and to the school leaders and teachers charged with bringing this model to life, focusing on the core processes on which they relied to do so. My third research question asks: *How do leaders and teachers animate these models in practice?* Again, I complement this question with a crosscutting one: *What complicates these efforts?*

The trajectory AF followed with its construction and development of Greenfield fell into a general pattern: actors were keen to pursue something innovative, yet constrained by their inherited understandings of "doing school" and tackling novelty, and thereby flummoxed by the uncertainty and complexity they encountered and the learning imperative thus created. Given this pattern, we might expect to see school-level actors – the recipients of the model produced by

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this pattern – attempt to animate the Greenfield model following a similar set of behaviors. To some degree, this is what happened. AF aimed to employ a clear and methodical process for animating the model, one that relied heavily on the convergent learning processes (e.g., trial-and-error testing to narrow and exploit established knowledge) to which AF and its key players were accustomed. Teachers and leaders made a good faith effort to engage in these learning processes and implement the model as envisioned, despite the tensions and challenges that had surfaced.

My findings also indicate, however, that when these actors encountered uncertainty and complexity – which they did perhaps more so than any other set of actors in this journey – they were pressed into divergent learning processes (e.g., learning by discovery and via the exploration of new knowledge). Yet Greenfield teachers and leaders were unequipped to engage in such activities successfully. What ensued was a messy process, one that led Greenfield actors back to the previous ways of "doing school" with which they were familiar. Just as the Greenfield model was developed by combining established and fresh ways of thinking about schooling, and just as the model's design was a mix of the old and the new, so, too, did actors rely on a blend of known and novel processes for bringing Greenfield to life – yielding a school model dramatically different from that which they originally envisioned.

Over the course of this chapter, I examine the particular combination of convergent and divergent learning processes by which Greenfield actors animated their new model, as well as the reasons for, and implications of, the path they took. I begin by describing the convergent learning behaviors in which actors engaged to animate the design, focusing on the specific structures and practices they leveraged. I then shift to the divergent learning behaviors, and explain the structures and practices included in these behaviors, as well as the difficulties encountered in pursuing this path. I conclude by analyzing the complications – recurrent across

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the Greenfield Project – that precipitated this unique course of action, and sifting through their implications.

<p style="text-align:center;">Animating via Convergent Learning</p>

Bringing the Greenfield model to life, as AF understood it, was an enormous undertaking, but one that could follow the same path the organization had used to usher in other types of innovation – though now on a much larger scale. From this perspective, actors ought to be able to engage in the same types of convergent learning behaviors they had in the past: trial-and-error testing, implementing provided ideas and strategies, continually integrating and narrowing the innovation, and capitalizing on existing knowledge and infrastructure (Van de Ven, Polley, Garud, and Venkataraman, 2008). AF was, in many ways, a learning organization: one that continually sought to improve, and therefore had devised ways to learn from its learning and learn how to introduce novelty into its schools. The CMO already had a recipe for this type of work, and already had numerous systems, structures, and practices in place; implementing Greenfield was another chance to leverage these, now for greater purposes.

Thus, AF launched an ongoing, cyclical process – ostensibly unidirectional – for animating the model. As intended, this process consisted of the design team: 1) developing or prototyping an element of the model (e.g., a new part of the close reading curriculum or a revised framework for the goal team component); 2) training teachers and leaders in implementing it; 3) observing the element in practice; 4) giving and, to some extent, receiving, feedback on the element; and 5) using the feedback loop to inform revisions on the element. This was a repeated cycle, recurring for all elements of the model, large and small, and transpiring year-round. The process was meant to be a clean, streamlined way to continually refine the Greenfield model and

"get it right," disseminate it to teachers and leaders, and ensure implementation of its components with fidelity, all while leveraging existing institutional knowledge and practices.

In the following section, I unpack the convergent learning processes intended as a framework to guide teachers' and leaders' implementation of Greenfield. I focus on the familiar structures and practices that supported these processes, and on which school-level players were instructed to lean to animate the new model: centralized curriculum design, specific communication structures, professional development, and operations practices.

Centralized Curriculum Design

Centralized curriculum design featured prominently among the established practices that AF imported to Greenfield. It was also a critical piece of the implementation puzzle, and illustrative of the convergent learning process. With the close reading and humanities curriculum, for example – large portions of which were revised in the second full year of implementation for grades K-6 – designers developed the initial units of the curriculum and trained leaders and teachers in the revised curriculum over the summer. Once the school year began, designers observed the revised curriculum in practice, gave feedback to those teachers (typically via their respective coaches) to improve their implementation, and sought specific feedback from the coaches to improve the curriculum. This observation and feedback cycle led to more revisions, often at a more granular level, such as with the humanities study guides for fifth and sixth grade self-directed learning (SDL). Each of these granular revisions would, in turn, be further refined and/or prototyped, given to teachers and leaders with some type of guidance, then implemented and observed, yielding more feedback and refinement, if not significant revisions.

This centralized curriculum design system was neat and rational on paper. AF had centralized its curriculum design for years, as this was seen as the best way to ensure consistently high-quality curriculum in every school, and seen as something that could be removed from teachers' plates, thereby allowing them to focus their attention on high-quality, targeted curriculum implementation rather than design. The use of trial-and-error testing for new curriculum or new curriculum components, wherein network-level designers provided leaders and teachers with the ideas and strategies to implement, refining and integrating the innovation as they went, had been successful with the AF Classic model. The sequence would, AF assumed, work with the Greenfield model as well.

In some ways, this sequence *was* effective with Greenfield. It was a reasonably efficient way to disseminate new curriculum or curriculum changes, and to get a pulse on how the curriculum was working in practice. Additionally, for a staff accustomed to receiving curriculum in this manner, the continuity was familiar and non-disruptive. The catch, however, was that this system was not designed to disseminate an almost entirely new curriculum, for all grades and subjects, at once, alongside other brand new components of the school model. I elaborate on the problems that arose from these circumstances, and the actions taken to remedy them, later in the chapter.

Communication Structures

Greenfield actors leveraged a range of inter-team communication structures to tie together players across the network and school levels, and support the cyclical process outlined above. Many of these structures were conducive, even essential, to the convergent learning processes AF desired to animate Greenfield. For instance, designers placed a premium on face time with teachers and leaders in schools to support the dissemination and refinement of the

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model, and had several vehicles for doing so. They observed instruction in Greenfield schools monthly (and more frequently if needed) to gauge the effectiveness of various Greenfield components and determine next steps for implementation support and/or design revisions. Designers worked with school leaders to develop and facilitate Greenfield-specific staff professional development (PD) during the summer and weekly throughout the year. They also met regularly with leaders, in person and virtually, and (somewhat less regularly) with teachers. When relevant, members of the design team even joined the school's weekly all-staff meetings.

These in-school structures were supplemented with virtual opportunities for communication about the animation of the model. For example, the Greenfield design team sent a weekly memo to school leaders, packed with information and updates about curriculum, assessment, staff training, operations-type tasks and deadlines, and myriad other Greenfield-related items. The lines of communication were intentionally kept open and two-way, and included virtual design team office hours, occasional opportunities for teachers to weigh in on particular decisions, formal feedback surveys administered to the school semi-annually as well as informal feedback surveys throughout summer training, and easy access via email. As the Greenfield model was refined and replicated across new schools, the teachers, leaders, and designers recognized a need for even greater inter-team communication and awareness, and therefore the structures described above were themselves refined and expanded.

Although the sheer scope of these communication structures could seem dizzying, their comprehensiveness was deliberate. The structures greatly facilitated the convergent learning behaviors necessary for bringing Greenfield to life. They created opportunities for exactly the type of top-down dissemination (with some input from the school level) that AF envisioned. These communication structures were essential for Greenfield's implementation, not only

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because significant communication was required to simply get the model up and running, but because actors were learning about components of the model while bringing them to life – and all while the design of the model was continually evolving. Systems had to be in place to keep up with the cyclical nature and quick pace of animating and refining the model. The ongoing process of designing, training, implementing, observing, sharing feedback, and revising model components could not have occurred – nor could Greenfield had been enacted at all – without solid communication structures.

Moreover, these communication structures, like the centralized curriculum design systems, capitalized on existing knowledge and infrastructure. Greenfield leaders, for example, were already accustomed to receiving weekly memos from AF Network Support (AFNS) with AF Classic information; the Greenfield memos continued this routine, but with Greenfield-heavy content. Greenfield teachers were already accustomed to being observed and receiving feedback on their implementation of curriculum; now some of that feedback focused on Greenfield. The structures were, again, already familiar, and leveraged the organization's deeply instilled culture of openness and communication, adding new layers as necessary to meet the needs of enacting a new model.

Professional Development

As detailed in the previous chapters, AF's coaching and PD systems were bedrocks of the AF Classic schools and imported wholesale into the Greenfield model. The PD systems, in particular, were key to bringing the new design to life, and exemplified AF's convergent learning behaviors. At its most basic level, PD carved out time for training teachers and leaders in new or newly revised components of the model. This time was structured to facilitate dissemination in ways aligned with convergent learning: designers created the PD sessions with implementation

ideas and strategies already defined, and guided participants in a process of identifying, understanding, and practicing these ideas and strategies, all the while leveraging familiar PD practices. To the extent possible, just as with AF Classic PD, dissemination of something new began with leaders, then moved on to teachers. For instance, AF always held school leader-only summer training prior to its several weeks of summer teacher training. Greenfield designers utilized this leader training to invest principals and deans in new features of the model, help them understand the features from soup to nuts (so they, in turn, could invest their teachers and coach them to high levels of implementation), and capture any initial feedback. Then, designers – or leaders themselves – ran a version of the training for teachers. In this way, understanding of the new or altered model component could cascade neatly from designers to leaders to teachers.

Similar to the communication structures and centralized curriculum design systems, PD was a critical part of launching and sustaining the ongoing, unidirectional cycle of elaborating and disseminating the Greenfield model. And, it was a feature already built into the DNA of AF – another example of leveraging established knowledge, and thereby maintaining continuity for Greenfield actors. These PD systems, however, left little, if any, freedom for leaders and (especially) teachers to explore the strategies and ideas handed down to them, and perhaps consider how to adapt them for their own contexts. The expectation was that leaders and teachers would simply receive these new or revised model components, understand and internalize them, and prepare to execute them as directed.

Operations Practices

Implementation of Greenfield, specifically via convergent learning behaviors, would not have been possible without AF's operations practices. The purpose of the school and network operations teams, as described in the prior chapter, was to "block and tackle" for teachers and

instructional leaders so that they could completely focus on teaching and learning. With the

Greenfield design, this purpose was even more pronounced. Although the core functions of the

school-level operations team, such as managing payroll, materials, and school buses, or being a

first point of contact for families and visitors, remained the same, additional Greenfield-related

functions were layered on top. The operations teams, by blocking and tackling for teachers,

leaders, and designers, allowed them to focus on design, dissemination, and implementation. For

example, through their oversight of the extensive technology critical to the Greenfield model, the

operations teams ensured the smooth functioning of a digital reporting hub where Greenfield

players could view and analyze students' academic data in SDL and core subjects. This

informed players not only about how students were doing, but also about how *they* were doing in

their implementation of the curriculum and other model components. This information, in turn,

fueled the cycle of elaborating, disseminating, and implementing the model.

Overall, operations personnel at the school and on the design team managed the systems

and structures that kept Greenfield communication flowing and technology running. They

functioned as the glue between the AF network, Greenfield design team, and Greenfield school.

Furthermore, operations staff devised ways to organize and systematize everything Greenfield-

related, the new features and the old. This required intentional, detail-oriented planning to

devise and set up appropriate organization and management practices in the first place, and

considerable effort to disseminate, coordinate, and sustain the practices once established. One

interviewee, lamenting the challenges of "trying to keep the trains on the track," was elated over

the launch of a document deemed "the mother of all spreadsheets" (Interview 10). This

spreadsheet, with hyperlinked resources throughout (e.g., curriculum resources, digital platforms,

data trackers, etc.), was a way of codifying, systematizing and making more accessible the many

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facets of the Greenfield model. These operations practices – and the people behind them – were crucial to bringing Greenfield to life. The were not just the glue between different sets of Greenfield players; they also were the grease for much of the convergent learning AF leaned on to animate this novel model.

Animating via Divergent Learning

The existence of these convergent learning processes – and the structures, systems, and practices that supported them – did not guarantee they would be used exactly as intended. Although teachers and school leaders dutifully and earnestly engaged in these processes, they inevitably encountered waves of uncertainty and complexity, of the sort one might expect with implementing an entirely novel school model. As school-level players, teachers and leaders were the ones at the front lines who had to figure out just how to make these components work. It was ultimately up to them to animate these components in ways that would provide high-quality instruction for students, and ensure no child's education was sacrificed during the transition from AF Classic to Greenfield. In order to do so, leaders and teachers stumbled upon divergent learning processes: experimenting with aspects of the model and learning by discovery, devising new ideas and strategies for model components, and listening to and incorporating the diverse perspectives of their colleagues (Van de Ven et al., 2008). Often without aiming to, school-level actors utilized these divergent learning behaviors to help them navigate and animate the new model.

In this section, I explain how teachers and leaders, while attempting to work within the confines of convergent learning, found themselves needing to break away and, at times, incorporate divergent learning processes. I focus on the contexts and practices they leveraged for these processes: vertical and horizontal collaboration, observation and feedback, and

classroom instructional. In addition, I consider the difficulties that resulted from employing divergent learning behaviors while also trying to work within an imposed, convergent learning framework.

Vertical and Horizontal Collaboration

The inter-team communication structures on which AF relied to animate Greenfield were effective in facilitating a unidirectional, top-down process, consistent with convergent learning practices. But, they were less effective in providing avenues for extensive, two-way collaboration and exploration between the school, design team, and network levels. For example, there was widespread appreciation among school-level players for the comprehensive curriculum and resources produced by the Greenfield design team, yet there was also frustration over the perceived lack of consultation with the teachers charged with implementation. One interviewee noted "a lot of ups and downs in terms of [the design team's] engagement with the actual [school] staff" in the early months of animating Greenfield, and acknowledged that, several years into the project, "there's still very much this notion that things get made by the design team… and then they [teachers and leaders] go do it" (Interview 4). When school-level actors felt confident in the curriculum or in a particular model element as designed, and were able to implement it successfully, few problems emerged. But when an aspect of the curriculum or an element of the model seemed dubious, or when teachers struggled to implement it smoothly or questioned its effectiveness once implemented, problems arose.

Under these circumstances, some school-level players questioned why they did not have a larger role in the elaboration or ongoing refinement of the model. Although there were opportunities for them to provide feedback, many – though not all – felt their feedback was used only selectively at best. One school-level interviewee said, "I gave a ton of feedback. I don't

think any of my feedback was necessarily… used or heard" (Interview 5). Another agreed: "We're asked for feedback all the time, but… it feels like it takes such a long time to convince anyone, but we're [we teachers are] the ones with such a great vantage point" (Interview 9). As the players with front-row seats to Greenfield in action, teachers and leaders were positioned to speak to the day-to-day experiences of teaching and learning within the Greenfield model in a way that design team members and network-level leaders were not, yet their voices were incorporated and heeded only selectively.

Given the school staff's daily on-the-ground perspective, as well as the collective teaching experience they brought to this work, it was not unusual for some teachers and leaders to express a desire for greater authorship within the model. One actor acknowledged the design team's good intention of trying to take "stuff off our plates," but noted that school-level players wanted a chance to take their own stab at improving difficult areas or unresolved issues within the Greenfield design. "Put us [teachers] in a room, and we will solve this problem together and it'll be better than what you gave us" (Interview 19), said one teacher. This interviewee noted the staff's track record of ironing things out for themselves in this manner pre-Greenfield, and wondered why they were handcuffed now as they sought to bring a new model to life.

As a result of this frustration, teachers, in particular, leaned on intra-team communication structures that created the context to engage in divergent learning practices. These structures included weekly grade team meetings, as well as regular times for departments (e.g., third through sixth grade math teachers) to come together. In addition, there were informal opportunities for individual teachers who worked closely together (e.g., classroom co-teachers in a primary grade classroom or the third grade close reading and writing teachers) to connect daily through impromptu conversations as well as during common prep times. These structures gave

space for teachers to discuss aspects of the model, and hear diverse perspectives. They allowed teachers to wrestle with the new material, exploring different ideas and strategies to try out in their classrooms. In essence, these structures provided the conditions for divergent learning.

These school-level contexts were home to horizontal and vertical collaboration and decision-making that contributed to the animation of Greenfield. Because teachers were ultimately the players at the front lines of animating Greenfield, they worked within and across grades to figure out how, exactly, to implement the new model effectively. Regarding most aspects of the model's design and envisioned execution, teachers deferred to the design team. Yet they found their own middle ground as needed. There was a sense of, "Control what we can control" and "Don't waste time talking about what we can't" (Fieldnotes, July 2017).

For the aspects of implementing Greenfield that teachers could control, such as how best to facilitate a strong goal team or leverage the SDL humanities block for an effective close reading lesson, teachers conferred among themselves to determine and share best practices. Especially when an element of the model felt dubious or vague, teachers took it upon themselves to make it work; after all, they had to stand up in front of their students and be effective teachers! For instance, one actor recalled teachers' frustration at the initial lack of guidance for the planning and facilitation of dream teams, and the subsequent guidance that was generally perceived as weak and out of touch. In response, "The teachers, without being asked to, they just made it [dream teams] work for themselves. Like, 'This is what I'm going to do'" (Interview 19). Teachers took it upon themselves to confer and hash out the details of dream team in a way that was effective for them.

Although teachers sometimes lamented their lack of autonomy within Greenfield (while acknowledging the continuity with AF's practice of limited teacher autonomy – i.e., this was not

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a new practice specific to Greenfield), it was not uncommon for them to take parts of Greenfield and make them their own. Teachers spent time in grade team meetings, cross-grade data analysis sessions, and informal pre-lesson planning sessions and post-lesson debriefs, sharing ideas for how to ensure smooth implementation of the Greenfield design. And, whether because of naturally diverse teaching styles or deliberate decisions to adjust (or, more likely, a mix of the two), certain model elements were brought to life with some variation. The Circle element of goal team was a good example of this. Despite a common, though continually evolving, structure, teachers' and leaders' facilitation differed in slight but substantive ways. Some implemented the structure literally and followed the script verbatim. Others loosely followed the basic structure, while still others picked and chose which structural elements to use and then incorporated unique elements of their own. The divergent learning practices resulted in slightly inconsistent implementation, but implementation that was adapted to teachers' respective contexts nonetheless.

Observation and Feedback

The regular observation and feedback cycles imported from AF Classic schools to Greenfield, and the mindsets nurtured by such work, were instrumental to the animation of the Greenfield model. Because all members of a Greenfield school staff were assigned a coach and expected to meet with that coach regularly – and in the case of teachers, were observed by their coach regularly – there were built-in systems for observation and feedback that could easily be tailored to Greenfield-specific content. Moreover, everyone was accustomed to getting feedback and constantly striving to better their practice; there already was an expectation in place that every staff member was on a learning trajectory and had a hunger to improve.

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The observation and feedback system certainly was a vehicle for top-down dissemination of, and coaching on, various model components and curriculum, but it also provided another space for school-level players to engage in divergent learning practices. In light of the newness of the Greenfield material and the model itself, it could be difficult to leverage the coaching system as intended, in a top-down manner: designers were still in the process of fleshing out and refining the model, and leaders themselves needed Greenfield-specific PD and coaching. All Greenfield school-level players were learning about the model nearly simultaneously, and were working together to bring it to life as they learned about it. A teacher summarized this challenge:

> Our [school] leadership team had no idea what's going on. They don't know what a Circle is, so how are they supposed to teach us how to do a Circle? It just was so overwhelming and confusing, and to go from a system where everything was figured out to like, "I don't know. What do you guys think?" And we're like, "We don't know! This is your thing. What do we do?" (Interview 19)

To cope with this challenge, leaders and teachers sometimes used their coaching meetings to discuss alternatives for implementation. They spent time mucking about with stubborn elements of the model or areas of the curriculum, strategizing and surfacing new ideas for teachers to try out in their classroom.

Teachers and leaders also used the observation and feedback cycles to dig into aspects of the model that were not sufficiently prioritized for formal PD. For example, explicit attention to students' social-emotional learning was an integral part of the vision for Greenfield. Training in this area occurred prior to the initial kindergarten pilot, and teachers remembered hungrily soaking up the PD, the likes of which they had never before experienced at AF. Once the model was at scale, however, teachers were disappointed that training on social-emotional learning seemed to take a back seat. "I don't think we're provided with the right resources or professional development to help us, especially in the social emotional learning front" (Interview 6), one

interviewee said. The interviewee went on to explain that teachers were typically given a one-pager of "all the things you could do about empathy [a Greenfield habit of success]. It's like, yeah, that's great, but what else can we get?" Sometimes there was not much else given to teachers, and they were left, again, to figure out how to execute the Greenfield vision on their own – often relying on vertical and horizontal collaboration across and within grades to do so. Under other circumstances, however, strategizing over how best to meet the desired social-emotional learning goals leaked into the domain of observation and feedback. A coach could take advantage of existing structures to observe a particular social-emotional learning issue in action, and then meet with teachers to share feedback and discuss next steps. Alternatively, a teacher could broach a social-emotional learning issue in her weekly coaching meeting, use that time to brainstorm with her coach, and then implement the landed-upon strategy in her classroom – with observation and feedback from the coach accompanying.

Classroom Instruction

At their most basic level, features of divergent learning transpired during classroom instruction. To be clear, Greenfield schools, just like AF Classic schools, were not of the "egg crate" variety, where teachers just shut their doors and taught in silos. The culture of openness and feedback, of collaboration and improvement, was too pervasive in AF for that to occur. But Greenfield teachers, like all teachers, did make in-the-moment decisions about implementation of curriculum and other model components. And, because teaching was departmentalized, teachers taught the same material multiple times to different groups of students, thereby granting opportunities to try out new approaches with the same material.

This type of in-the-moment, or over-the-course-of-instruction, modification and experimentation exemplified divergent learning. For instance, when a close reading teacher

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noticed that lessons in a particular unit emphasized the primary skill of finding a text's central idea, but at the expense of the secondary skill of analyzing the author's craft and structure moves, the teacher experimented with ways to address both skills. These experiments included modifying the questions asked of students, adjusting the time allotted to discuss various portions of the focus text, and even playing with which lessons to teach over the course of the unit. By conducting these mini-instructional experiments, the teacher was able to learn by discovery, and apply that learning to the improved implementation of the close reading curriculum.

Difficulties with Divergent Learning

Greenfield teachers and school leaders stumbled upon divergent learning processes by necessity. Even with a hard-working design team completely devoted to working out the nuts and bolts of the Greenfield design, and, when the need became apparent, to better supporting the implementation of the design, there was still a great deal of uncertainty and complexity with which to contend. (I discuss the reasons for such implementation uncertainty and complexity in the next section.) Animating Greenfield was not so straightforward as following a unidirectional, top-down process, even when that process was supported by sound systems, structures, and practices, and by a great deal of energy and good will. School-level players were, in many ways, the chief agents of a convergent learning process, and therefore most sensitive to the ways in which this process was insufficient to implement something as bold as Greenfield. It was not surprising, then, that these actors naturally slipped into divergent learning processes to cope with these challenges.

Yet divergent learning processes came with their own set of difficulties, namely that teachers and leaders were unequipped to engage in such learning. Because AF had not anticipated engaging in divergent learning practices, it had no plan to develop capabilities for

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doing so. Nothing had been designed for school-level actors to learn about or navigate divergent learning; mechanisms existed only to facilitate convergent learning. Thus, teachers and leaders not only stumbled *upon* divergent learning practices, they also stumbled *with* those practices. They had no idea how to leverage the discoveries they made when experimenting with model components, or how to reconcile the new ideas and strategies they devised with those they were provided by the design team.

Absent support to engage in divergent learning behaviors, the potential of these behaviors was weakened. Over the course of mucking about with elements of the design or the curriculum, teachers and leaders often found themselves falling back on their old ways. As one actor explained, "When things still feel like they're constantly in flux… what I end up going back to is what I know about good teaching" (Interview 1). A teacher struggling to manage the culture of his Circle, for example, might explore various ideas and then just lean on the practices he already knew about managing student culture: doing so in a tightly controlled manner, with little room for student voice – practices antithetical to the goals of Circle. A leader trying to help her teacher cope with the flexibility and differentiation required for an SDL block (where students were working at multiple levels and paces), after devising and trying to integrate various strategies unsuccessfully, might simply advise the teacher to dictate the level and pace at which each child should work. Trying to implement the model as directed *and* manage the daily implementation dilemmas by engaging in divergent learning behaviors – unsupported – proved a frustrating, messy, and largely ineffectual means for school-level players to animate Greenfield.

Analysis: Lather, Rinse, Repeat

Achievement First intended to animate the Greenfield model using a streamlined, largely unidirectional process that employed familiar convergent learning practices, albeit on a larger

scale. Just as with the construction and development of the model's design, however, animation was not quite so straightforward. What ensued was a messy combination of convergent and divergent learning processes, and another pairing and layering of the old and the new. Van de Ven et al. (2008) advocate for a blend of convergent and divergent learning practices, or a blend of exploitation and exploration (Hatch, 2000; March, 1991; Peurach & Glazer, 2012; Peurach, Glazer, & Lenhoff, 2016), to navigate the innovation journey, balanced and working in tandem with one another. But AF's version of this blend – heavy on convergent learning and light on divergent learning, with no intention for the latter and therefore no plan to learn how to *do* such learning – was ineffective in launching something novel. The result was a model that, when implemented, was neither Greenfield nor AF Classic, but rather something in between: a hybrid.

This result may well invite the question of why Greenfield actors animated the model in this fashion. One might argue, for example, that there was an approach more customized to the innovative nature of the Greenfield Project, one that employed an intentional, integrated mix of exploitation and exploration (likely light on the former, heavy on the latter), with scaffolds for how to navigate such an approach. I contend, however, that the messiness and repercussions AF experienced in their approach to implementation were largely inevitable due to three, now recognizable factors: a learning imperative derived from the uncertainty and complexity endemic to innovation, the presence of inherited modes of learning which, in turn, prevented that learning imperative from being adequately met, and the tenacity of inherited understandings of "doing school" to which many actors regressed in the face of such challenges.

In the subsequent sections, I analyze the complications that produced AF's approach to animating Greenfield, and the consequences of this approach. Extending the analysis from the prior two chapters, the three categories of dynamics that surfaced in animating Greenfield

directly parallel those that played out in the work of constructing the model and developing its design: inherited conditions, the learning imperative, and inherited modes of learning. Unlike earlier analysis, however, the work of animating Greenfield is better understood by considering the dynamics among these categories in a different sequence: first, by considering the learning imperative; second, by considering inherited modes of learning; and third, by considering inherited conditions.

In examining precisely how these factors manifested in the animation of Greenfield, we begin to recognize their redundancy with the tensions and challenges present in the model's earlier phases, as well as recognize the cumulative effect of continually grappling with the same factors throughout all phases of this project. But that, after all, is the chief takeaway from my analysis of AF's Greenfield Project: work of this sort does not proceed in the sort of rational, linear sequence in which AF was well practiced. Instead, this type of work requires careful coordination among convergent and divergent learning processes and, with that, the understanding and deft management of the dilemmas that arise from interdependencies among inherited conditions, learning imperatives, and inherited modes of learning.

Learning Imperative (Reprise)

Uncertainty and complexity, present throughout the Greenfield Project, became especially prominent and problematic in the implementation phase. To construct and design something novel with little knowledge and precedent was uncertain in itself; trying to animate this model – with an unfinished design already riddled with ambiguity – exacerbated this sense of uncertainty. School-level actors were attempting to pioneer something with minimal support and little know-how, all the while in "perpetual beta." The uncertainty of the work then compounded – and was compounded by – its complexity. Implementation further exposed the

intricacy and shortcomings of the model, aggravated the already-difficult process required to bring the model to life, and intensified the surrounding pressures. A learning imperative naturally followed from these circumstances, for it rapidly became clear that a clean, linear plan to disseminate and implement an entire school model would not work as it had with AF's previous innovation experiences. AF needed to learn to approach this implementation differently.

Here, I elaborate on the features that produced this learning imperative. They are, indeed, the same themes present in the previous two chapters – novelty, uncertainty, and complexity – because they were a common thread through the construction of Greenfield, the development of its design, and now in its implementation. Achievement First could not dodge these themes. They are endemic to the work of innovation, and therefore continually posed problems for the Greenfield Project; this common thread was no aberration. These problems were exacerbated and extended in the implementation phase, however, because of their accumulation in earlier phases and because uncertainty, novelty, and complexity were most difficult to wrestle with at the school level. My analysis intentionally reflects the increased scope of these themes. In these sections, I elaborate more extensively on the themes underlying the learning imperative, illuminating the manner in which the same factors manifested differently than they had before, *and* similarly, during the implementation phase.

Novelty and uncertainty. Knowingly or unknowingly, voluntarily or involuntarily, Greenfield teachers and leaders were pioneers. Pioneering inherently involves stepping into some form of unknown, with no strong model for features of the work. If actors were not cognizant of the absence of exemplars prior to beginning implementation, they certainly became hyper-aware of this absence as they went on. Just as no peer CMOs or school systems were

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attempting to construct a novel model while continuing to operate a network of schools, and just as no school model existed that reflected the full scope of Greenfield's design, so, too, was there no archetype for the type of whole-school model implementation that AF was attempting. This was an unsettling realization, to say the least. One player, recalling that I was interested in studying the Greenfield Project in part because of its uniqueness, said,

> You're like, "Nobody else is doing this." I'm like, "Oh, I wish someone had told me that before we started Greenfield, because I didn't know that… [We were recently told,] "Well, there are no [Greenfield] experts out there." I'm like, "Then what are we doing? I didn't sign up for this." (Interview 5)

The absence of archetypes to guide implementation was difficult to swallow and multiplied the uncertainty players felt. It created a sense of, "Not only do *I* not know how to animate this thing, but it turns out that no one does!"

Daily uncertainty. The pioneering nature of Greenfield's implementation yielded uncertainty (and frustration) for concrete, day-to-day reasons beyond the unsettling, but more abstract, sense of going it alone. First, teachers and leaders could only prepare (i.e., for instruction, assessment, expeditions, dream teams, etc.) so far in advance. Although the design team worked hard to stay ahead of school-level players, trying to produce final versions of instructional units, SDL modules, assessment schedules, or expeditions plans weeks before they would be used, it took time to achieve that goal. One teacher commented, "It was very hard as a teacher to plan out your year when you're like, 'Well, what are they going to find for me to do, and is it going to be the best thing to do?'" (Interview 14). Second, gaps needed to be filled in to move from design to implementation. Because everything about the model was new to everyone, it was not a design that could simply be handed to a teacher; there was some figuring out required to actually execute each model component in practice. One actor, referring to implementation of the social-emotional learning components of the model, described this gap:

> We're like, "Yes. Everything you're saying is great. This sounds perfect. We're going to have all this stuff for the kids." [Then] we were like, "Wait a second." It's like the ideas were all up here, and we were all like, "Yes, this all sounds great. Everyone's aligned." Then the actual implementation of it, we were like, "Okay. This is different. This is *hard*." (Interview 6)

Even teachers with considerable experience (a large percentage of the initial Greenfield faculty) had no knowledge of how to do this, because they had no experience with animating a novel model in this way; they, too, were finding their way as they went.

Support to bridge this gap was scarce, in part because (once again) everyone was new to the work. Despite carved-out time for coaching and PD, there was a great deal of material in which to train teachers, and limited PD real estate in which to do so. Leaders were weakly positioned to coach teachers, because they, too, had to be trained. Moreover, it took time to determine the scope of support needed for implementation. At some point, it became apparent that the novelty and uncertainty of Greenfield necessitated significantly more support for school-level players than originally anticipated. One actor explained,

> We hired designers and then we were, "Oh crap, well now we need help figuring out how to bring this to life." I think we really underinvested and underestimated the implementation and change management side of the house. Then our [design] team felt the burden of that, as did the school teams. (Interview 26)

In response to this realization, leaders and designers gradually began to place a stronger emphasis on Greenfield-specific training and coaching, particularly at the granular level of how, exactly, each component should be executed, and what it should look like in action. But the frustration and uncertainty that resulted from the initial underinvestment in, and underestimation of, what it would take to animate the model posed real obstacles to the success of this process.

Perpetual beta. A final challenge of pioneering, which fueled the uncertainty school-level players felt, was the "perpetual beta" of implementation. The design for the model evolved as it was implemented, so the model components and curriculum were continually changing.

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Sometimes the changes were small tweaks, but other times an aspect of the model hit a dead end and players had to reverse course. For example, the initial Greenfield math curriculum placed great emphasis on the SDL component. Designers and network leaders wagered that, even if students had less time for teacher-led math instruction (in order to accommodate the SDL block) than they would in the AF Classic model, the self-guided math portion would more than compensate, therefore justifying the significant modification of AF's math approach. After more than two years of tinkering with the Greenfield math curriculum, however, students' math achievement remained subpar, and therefore AF made a dramatic shift, deciding to return to a (slightly adapted) version of its AF Classic math structure. This type of ongoing change – sometimes small, sometimes large, but always present – bred uncertainty, not to mention frustration and discouragement. One actor noted that teachers did not want to be in a perpetual "holding pattern" or continually have questions that could not be answered (Fieldnotes, November 2017). Another player lamented, "It just feels like this never-ending path of unknowingness. It's hard to stick around for that" (Interview 5).

Complicating pressures. If the implementation of the Greenfield model was rife with uncertainty, it was also rife with complexity, due in part to the enormous pressure surrounding the process. This pressure was derived from several sources, one of which was the weight of responsibility to AF's students and families. Student results on state tests and in college demonstrated that change needed to happen sooner rather than later. And, as mentioned in Chapter IV, the organization prided itself on accountability for its promise of equal educational opportunity and its mission of high academic achievement and college success. Given this, Greenfield *had* to be implemented successfully, and success was still defined by the organization's governing principle of "achievement first." Of the various outcomes Greenfield

was meant to attain, academic achievement was still the priority, with standardized test scores and college graduation rates the primary metric. Thus, at the end of the day, Greenfield players had to figure out a way to implement the new model that would deliver strong academic results.

The weight of this responsibility left AF little room for risk and failure in the process of animating its new model. Despite taking the risk of constructing, developing, and launching a novel model in the first place, the CMO – understandably – seemed reluctant to take much risk when actually implementing the model. As one actor bluntly put it:

> No one has ever told us, "It's okay if you have a year where the scores aren't great, because we know you're building towards these other things, and we know eventually you will get back to great scores." No one is ever going to say that in this network. There's never going be a space for that. (Interview 15)

There was no wiggle room with students' test scores, which meant there was little wiggle room for trying out new features of the model and playing with different approaches to execution.

This reluctance stemmed from and fed AF's sense of urgency with Greenfield, and contributed to its approach to bringing the model to life. The prioritization of academic achievement, for example, hindered any actions that would not immediately result in high standardized test scores. So, too, did the responsibility AF felt to its families, and to fulfilling its mission (which was the entire reason Greenfield existed). In addition, AF's track record of success in low-income neighborhoods increased pressure to animate Greenfield successfully: if AF were going to do something different, it must quickly exceed the high bar that its Classic schools had already set among public district schools and charter schools. Similarly, the logic AF was based on – impressive results on standardized tests and in college admissions, at scale – needed to be sustained in order to continually attract funding and talent. An interviewee summarized: "There's a lot to lose. Having a disaster of a school for even a few months can

have real consequences, perceived and real. That's… made it harder to have high-risk products"

(Interview 18).

Yet innovation and organizational change require some measure of risk and failure in

order to gain traction, and this created a dilemma for AF. On the one hand, the risks of failure

were genuine and multiple. On the other hand, missteps and falls would inevitably accompany

any initiative bent on achieving deep and lasting change. A Greenfield player spoke deftly to

this tension:

> To innovate you have to be willing to fail and get back up and try again. That's the nature
> of innovation, but innovating when something so precious as children are involved is
> incredibly pressure-filled because the fails can't be too big, right? The stumbles can't be
> too long. You can iterate. You can make things better, but if you *mess up* it has a much
> different impact than if I make this crappy version of an iPhone, and it fails. The people
> on this [design] team and in [Greenfield] school sites are incredibly invested in children
> and love children. The pressure that they put on themselves and that they feel to do right
> by children makes it extremely hard to take risks and to innovate. (Interview 26)

AF struggled to reconcile this tension. The organization embraced innovation by jumping into

the model full-throttle, rolling out all components simultaneously across seven grades. (I address

this decision shortly.) But it also walked a cautious path in animating Greenfield by trying to

adhere to systems, structures, and practices that it knew "worked," and by keeping a tight rein on

teachers and school leaders as they tried to figure out how to enact the new design.

Complexity of the model. Two critical features of Greenfield's complex model surfaced

during implementation, and further complicated the process. First, school-level players were

attempting to animate an extraordinary amount of newness at once. Achievement First had

decided to convert a single AF elementary school to the new model wholesale, as well as

combine the elementary school with its sibling middle school's fifth and sixth grades (which had

piloted the model the previous year). Thus, over the summer of 2016, the selected conversion

site transitioned from a well-established K-4 school that had operated for 12 years using the AF

Classic model (with the exception of its kindergarten piloting the new model for a year), to a K-6 school now using the Greenfield model.

In hindsight, most players agreed that converting a school to the new model for all grades, simultaneously, was ambitious – and probably a catastrophic mistake. "[C]hanging a lot of variables at once is really hard" reflected one actor. "I think that's been one of the reasons it was hard to get Greenfield humming all together. It was a lot of new variables to get right" (Interview 7). Another actor acknowledged that, given the magnitude and novelty of the model, "[U]ltimately when you put it all together [it] is pretty hard to execute… It's hard to do all of these new elements to excellence" (Interview 13). Others regarded the decision to convert wholesale as naïve: "We said in a very naïve way, 'We're going to try to win on all of this' … instead of saying, 'Here are the pieces we have to get right in the first year we convert, and then over time…'" (Interview 3).

Theoretically, the process of animating Greenfield might have been far more straightforward had it entailed only a small set of model components or been implemented only in one grade at a time. Yet that was not the direction AF took. The organization was concerned about delaying the expansion of Greenfield because it seemed a slippery slope to wait until the model's design was fully developed, or to wait until the converting school was one hundred percent ready to convert. This line of thinking, some worried, might lead AF to wait for unattainable perfection – or at least wait a very long time – before embarking on Greenfield. Furthermore, AF felt it could not afford to wait, in large part because of its sense of responsibility to students and families, detailed above. The CMO felt that it "would feel irresponsible" (Interview 8) to move slowly and bring Greenfield to life bit by bit. There seemed no other choice but a "gung-ho" approach, yet this meant that teachers and leaders had to divide

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their attention across all pieces of the model, and do so horizontally and vertically across the entire school.

Clarity. The second feature of the model's complexity that surfaced during, and complicated, implementation, was the lack of clarity around the nuts and bolts of the model's many components and sub-components. Without a clear vision, it was difficult for school leaders to lead, and for teachers to teach (not to mention the difficulties this posed for student learning and for families trying to support their students). An actor explained the nuances of this challenge:

> [Y]ou're figuring out as you go along there's not always a clear vision of excellence. You don't always know what you're striving for. When you don't have a clear goal in mind, it makes it harder to achieve – and/or if you think you've reached the bar, but you realize that's not quite where it needs to be. (Interview 17)

Without a clear definition of what each component of the model should look like when implemented at a high level, teachers struggled to feel confident in their execution, leaders were uncertain of their coaching, and parents and students felt easily frustrated. Rather than leaders being able to work with teachers to close the gap between their instruction and the vision, or teachers being able to support students in achieving a particular bar, players were left scrambling to figure out what that vision or bar was – while enacting it.

Managing a complicated process. The uncertainty surrounding Greenfield's implementation, the pressure behind it, and the complexity of the model itself, were exacerbated by a process of animation that was itself complicated. First, there was the challenge of animating a new design in the midst of an old design. When reflecting on the experience of implementing the Greenfield model, an interviewee, referring to the uncertainty of implementation, remarked, "The plane was being built around us as we were flying [it]… and that's really difficult" (Interview 1). Yet my findings suggest that the Greenfield Project was not simply a case of

building a new plane – a new school model – while flying it, a challenging endeavor in itself. Rather, bringing Greenfield to life involved building and flying a new plane *out of and while flying an old plane*. This was a different animal entirely. There was no "break" in between the old and new school models (except for a month-long summer break), and therefore no type of fresh start as a school. In June, the school operated with an AF Classic model; by August, it was a Greenfield school, in the same building, with most of the same staff, and with the rest of the AF Classic schools continuing to operate across the AF network. In animating Greenfield, school-level players were expected to make a significant departure from AF Classic, but there was little opportunity for them to actually do so.

Investment and understanding. Contributing to the difficulty of this process were key players' varying levels of investment in and knowledge about Greenfield – its purpose, content, and the scope of change it would require. While early Greenfield participants, namely the teachers and leaders involved in the initial kindergarten and fifth and sixth grade pilots, went through an intense two-week, Greenfield-specific summer training to develop their understanding of the model, its philosophical underpinnings, and the motivation behind it, the rest of the Greenfield team (who adopted the model the following year) did not. The result was a different perspective about the innovation, a more superficial understanding of the work overall, and a "disconnect" between early Greenfield participants and their later-involved colleagues. Without a consistently deep grasp of the purpose of the Greenfield design and its components, it was more difficult for players to a) effectively execute the model, b) be patient with the iteration and pioneering required, and c) remain invested in the broader vision of the model.

Not only did the grasp of Greenfield's components and deeper rationale vary, but the understanding of the scope of change was mixed as well. Due in part to a desire not to

overwhelm constituencies – specifically teachers and families – network and school leaders framed the conversion to Greenfield as an opportunity to make changes to the AF Classic model, not a chance to overhaul it. In a parent orientation for incoming kindergarteners and other new students, for example, the facilitator said of core Greenfield components (e.g., SDL, dream team), "[We] added these to our [existing] program" (Fieldnotes, May 2017). In a summer training session for new teachers, the facilitator asked participants, "What do you already know about Greenfield?" and found that most knew next to nothing about the model (Fieldnotes, July 2017). (Note that both of these examples followed the model's first full year of K-6 implementation.) A school-level player remembered that Greenfield was not framed as a distinctive new model, but instead presented as, "We're just going to change a couple of things" (Interview 19) – and then ended up being a great deal more. The well-intentioned effort to make the process of animating Greenfield more palatable seemed to backfire. It left actors feeling surprised and overwhelmed by the amount of change and by the messiness of the change process, which in turn fueled the difficulty of bringing Greenfield to life.

Change management. If the scope of change surprised people, the scope of change *management* required to animate Greenfield was even more surprising. The communication structures, coaching and PD systems, operations practices, and general (intended) top-down approach to animating the model were, it turned out, insufficient to accommodate the management of so much change. And, the leaders and designers to whom it fell to support teachers in managing the magnitude and constancy of change were ill-prepared to do so. One player commented, "I think I expected some challenge in just managing the change… [but] I did not expect the amount of challenge" (Interview 3). Another actor spoke more forcefully about the challenges of change management:

It's really hard for me to talk about the metamorphosis [of transitioning from the AF Classic model to Greenfield] or like, "Oh, each year we've grown and we've made traction." No. We're fighting every day to do what is right for kids. I have to spend a very large amount of my time with people, talking them off the ledge before we can even talk about what it is we need to do for kids. (Interview 2)

Actors fought to navigate the scope and constancy of change on multiple levels, grappling with the substance of the new model and the process of animating it.

Managing gaps. Another factor complicating the animation of Greenfield was the question of how best to identify and manage the gaps that emerged. These gaps manifested in several directions: gaps between the initial Greenfield vision and the evolving vision, gaps between vision and design, and most prominently, gaps between design and execution. There were multiple reasons for such gaps, ranging from the complexity and initial underdevelopment of the design, the rapidity of the transition to the model, and the talent and skill behind the model's design and execution, to a healthy flexibility and willingness to allow the model to evolve as design iteration and implementation transpired. The formation of these gaps added to the difficulty of bringing the model to life. When an aspect of the model was unsuccessful, stakeholders had to ask themselves whether it was a vision gap, design gap, or execution gap. "I think knowing what's a design problem and what's an execution problem—sorting that out has been really hard" (Interview 22), acknowledged one actor.

Once a particular gap was identified, Greenfield players had to dig deeper to determine the root cause of that gap. Van de Ven et al. (2008), writing of the challenges of attribution for innovation failure (or success), delineate four typical attributions that actors make: 1) problems with a team's talent or competence for the task at hand; 2) problems with the design of the innovation; 3) problems with the process for implementing the innovation; and 4) problems with bad breaks. In order to animate Greenfield successfully, most players agreed that the design and

execution of the model, as well as the talent behind both, all had to be at "A-level." Admittedly, it was "hard to toggle back and forth to get how much is talent, how much is model, how much is PD time to work out kinks. It's hard to assess" (Interview 21). Moreover, although sometimes it felt clear which category an issue fell into, often it was not so tidy, and therefore there was not always agreement about the "attribution of failure." This made the work of bringing Greenfield to life even messier, because the ability to effectively diagnose the root cause of a problem was critical to quickly determining a remedy. Diagnostic difficulties hindered the process of animation.

Conversion-specific challenges. A final factor that complicated efforts to animate Greenfield was the simple but significant fact that the initial Greenfield conversion school had existed for years as an AF Classic school, and had experienced great success with that model. The school was selected to transition to Greenfield largely because of its success: its strong student and adult culture, its students' impressive test scores, and the strength and experience of its teachers and leaders. Ironically, this record of success and years of establishment made the process of animating Greenfield even more difficult. As one player reflected, "[W]e were a highly successful school and a highly successful team. Then Greenfield and all the great and challenging things that have come with it… hit us, and it just was a punch to the gut" (Interview 3). Coupled with this lack of success was a feeling that, now in animating Greenfield, "people always seem like they're sprinting, which is just a really crappy way to live" (Interview 27). The shift from steady success and positive momentum to intermittent success paired with lots of failure, and from general stability to continual sprinting and instability, exacerbated the difficulties of bringing a new model to life.

Revisiting the learning imperative. Uncertainty and complexity permeated every facet of Greenfield's implementation, and threw into disarray AF's intention to animate the model using a neat, methodical process. Achievement First expected the process of bringing a novel school model to life to be straightforward – certainly not easy or simple, but straightforward nonetheless – and similar to the process it had used to integrate other innovations and reforms into its schools. Yet AF's plans were no match for the scope of the novelty and uncertainty of implementation, the genuine complexity of the model and the process required to animate it, and the overwhelming pressure that enveloped this process. Animating Greenfield required AF to learn how to innovate in dramatically different ways, and to develop capabilities for such learning. The CMO was unprepared for this work.

Inherited Modes of Learning (Reprise)

Achievement First, never an organization to shy away from challenges, tried to meet the established learning imperative by leaning harder on the type of learning to which it was accustomed: convergent learning. Greenfield actors brought with them an inherited way of learning a new reform or innovation: designers at the network level would research and develop the innovation, train school-level players in it, and then teachers would implement with coaching from their leaders, refining the innovation and its implementation with practice, over time. This was a system of learning that capitalized on solid, existing structures and systems. Curriculum design was centralized so that leaders and teachers could focus on implementation of the innovation rather than its design. Staff meetings, PD, observation and feedback, weekly email memos, and surveys existed to facilitate dissemination of the innovation and its refinement through trial-and-error testing. The operations team "blocked and tackled" for instructional

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leaders and teachers so, again, they could focus their attention on animating reforms to teaching and learning. Much was in place to enable the successful implementation of something new.

But when these existing systems, which leveraged AF's established knowledge of convergent learning behaviors, proved insufficient for animating the Greenfield model, players had few fallback options. Here, I dig beneath the action described in the first half of the chapter, in which teachers and leaders stumbled upon divergent learning behaviors to animate Greenfield, yet were hindered in their efforts by their inherited modes of learning. I uncover the dynamics – again, a deliberate extension of the analysis from previous chapters and prior phases of the project – that made navigating these inherited modes of learning such a daunting challenge for AF: the absence of a learning infrastructure and capabilities, and the subsequent imbalance between two modes of learning, as well as the consequences thereof. By grasping the significance of these inherited modes of learning and the tensions they created, most critically at the point of implementation, we can better comprehend why players' inherited understandings proved so tempting.

Absence of learning infrastructure and capabilities. School-level players had never animated novelty on a comprehensive, whole-school scale, so they did not know how to go about animating novelty differently. For instance, the idea that there would need to be "reinvention" of the innovation, in which school-level players "modify an innovation to fit their local implementation setting" (Van de Ven et al., 2008, p. 53) was anathema to most AF teachers and school leaders, to say nothing of designers and network-level leaders. Although the Greenfield model was treated as a "homegrown innovation" (p. 55) because it was designed within the AF network, it was not co-constructed by teachers and leaders who were truly internal to the eventual implementation setting. Thus, the innovation felt, on some level, imposed from above,

and therefore it required a transfer of ownership from the design team to the school team, and at least a modicum of tailoring and adapting. Van de Ven et al. emphasize that "some autonomy is needed for an adopting unit to identify with and internalize an innovation" (p. 56). Yet AF was an organization that advocated centralization and standardization of its practices, not autonomy. Furthermore, it was precisely that type of centralization and consistency, and the very absence of autonomy, which had produced impressive results at scale. Straying from these principles, or even thinking to do so, was a stretch.

Therefore, nothing was in place to aid this reinvention process, nor the divergent learning behaviors that might support it. Even though AF was a learning organization in the sense that it was continually seeking improvement and continually learning from its own and other schools' successes and failures, it was not positioned to learn new ways of organizational learning. This required a learning-to-learn infrastructure, what Peurach et al. (2016) describe as an imperative in which the organization "must learn to develop and leverage the foundation – the essential strategies, operational infrastructure, and normative infrastructure – needed to create, use, retain, and manage intellectual capital through continuous learning and improvement" (p. 614).

Nothing like this existed for the animation of Greenfield. No infrastructure was developed to enable teachers' and leaders' sense-making of the new model components and sub-components that came their way, nor to facilitate truly reciprocal relationships that would allow teachers and leaders to collaborate with network players in adapting Greenfield to this specific school. Moreover, no "capabilities for adaptive use" (p. 622) were cultivated. To develop such capabilities, AF needed a learning-to-learn infrastructure. Yet it was impossible to create that type of infrastructure while also leaning heavily on convergent learning behaviors – so heavily that the very notion of alternative (divergent) learning behaviors was rendered invisible.

Therefore, when school leaders and teachers organically and necessarily stumbled onto divergent learning behaviors to make Greenfield "work" and to cope with the substantial uncertainty and complexity at hand, they did so absent the foundation or capabilities required to do so successfully. These actors exercised agency over the model in ways large and small, sometimes tinkering with a component openly and sometimes surreptitiously. They worked with their colleagues and coaches to make sense of the model's components and curriculum, and, when appropriate, to adapt them in order to decipher a realistic, operational path forward. This was neither AF's nor individuals' inherited mode of learning or of animating something new, however; in fact, it was antithetical to the tightly controlled, top-down process AF typically took with innovation. Therefore, there was weak support for adapting the model, and adapted components rarely went far. Perhaps one or a handful of teachers would tweak their implementation of a particular component, but the tweak was not nurtured and explored further, nor were branching ideas successfully integrated with existing knowledge.

Imbalance between modes of learning. In this manner, divergent and convergent learning activities co-existed, but not in the symbiotic, balanced way necessary to successfully animate an innovation. The divergent learning activities – when they occurred – were not executed well, because no one knew how to do them, and no one was focused on developing capabilities for learning how to do them. The convergent learning activities *were* executed well, because everyone knew how to do them, but they were maladapted to the task at hand and did not yield the desired outcomes. Achievement First's inherited mode of convergent learning, previously a great strength of the organization, now hindered its ability to effectively animate Greenfield.

Consequences. Achievement First struggled to meet the learning imperative set before it. Lacking sufficient support for the unlearning and new learning (i.e., divergent learning practices) that animating an innovation mandates, predictable pitfalls befell AF. Overall, there was variability in Greenfield's implementation, because actors navigated the uncertainty and complexity of the process, and the tentative foray into divergent learning, in different ways. For example, there were pockets of implementation that fully matched the vision for Greenfield, such as specific expedition modules that were expertly designed and implemented – often due to a good dose of autonomy, experimentation, and adaptation by the person(s) responsible. There were also outlying instances where implementation deviated significantly from the Greenfield vision and the AF Classic model, not falling into a hybrid of the two but rather landing far outside both, such as some teachers' implementation of Circle. Mostly, however, Greenfield actors regressed to past practice – their inherited conditions – and implemented the novel model in ways closely resembling its AF Classic predecessor.

Inherited Conditions (Reprise)

As we have seen in previous chapters, AF struggled throughout the Greenfield Project to acknowledge and address the inherited conditions with which its actors, and the organization itself, were encumbered. Nowhere was the power of these conditions more glaring and hampering than in implementation.

During this period, school-level players were pulled in opposite directions. They were torn between the substance of two models, Greenfield and AF Classic, the first compelling in its promise of improvement through innovation, the second in its familiarity and certainty. Players were torn as well between the convergent learning behaviors on which they were expected to depend for implementation, and the divergent learning behaviors that such implementation

necessitated. With little know-how and support for divergent learning, teachers and leaders were tugged back toward the understandings inherited from AF Classic, and those understandings began to corrupt the design of Greenfield.

Here, I unpack the manner in which the inherited understandings of the organization and of individual players – now the teachers and leaders – manifested in the animation of Greenfield. The structure of this section, of course, indicates a recurring pattern, in that it deals with inherited ways of "doing school" that were a thorn in the side of the Greenfield Project, every step of the way. Yet I have positioned this section last in the analysis to illustrate how, in light of a formidable learning imperative insufficiently met by inherited modes of learning, school-level actors were bound to fumble in their attempts at divergent learning, and therefore regress to their inherited conditions. Given the dilemmas AF experienced, it was inevitable that the erratic path of innovation would end with such regression.

Inherited individual understandings. The teachers and leaders primarily responsible for bringing Greenfield to life were no different in their inherited conditions than their counterparts responsible for constructing the model or developing its design. They, too, brought with them individual understandings of teaching and learning, and of student culture. Indeed, AF had gone to great lengths to instill in its teachers and leaders specific methods of teaching and learning, of student culture, of coaching and PD, and of school operations. The organization worked hard to build "muscle memory" with these methods, helping actors become fluent and invested in them. It stands to follow, then, that explicit attention to divergent learning practices was warranted to unlearn these methods and muscle memories before trying to learn new ways of "doing school," but that never occurred.

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Given these inherited circumstances, teachers and leaders adopted (usually unknowingly) a mix-and-match approach to Greenfield's implementation that reflected their competing instincts and demands. With diligence and integrity, school-level actors worked to implement the new designs, practices, and curriculum that were handed to them. But, when aspects of the new model proved insufficiently elaborated, ineffective, or, for whatever reason, difficult to implement as is, teachers and leaders often slipped into divergent learning behaviors, tinkering and strategizing to try and implement the innovation effectively. Greenfield actors were, after all, fully cognizant of the urgency and accountability hovering over them. They knew that "achievement first" was still the heartbeat of their work, regardless of whether it took the form of AF Classic or Greenfield (if anything, there was increased pressure to achieve because Greenfield was seen as a vehicle to greater heights). And, beyond test scores, actors cared deeply about the students in their care and the families whom they had committed to serve. This combination was so powerful that it could feel constraining at best and crippling at worst. The pressure to "get Greenfield right" – while keeping achievement high – was palpable. "We're very now, now. We're like politicians in this organization. It's like we're all running for reelection next year. That comes out of this feeling of urgency," explained an interviewee (Interview 13). This left little room for the type of exploration and experimentation that is natural with, and necessary to, change and innovation. Instead, it forced actors to figure out a way to animate Greenfield that would feel true to the vision of the new model *and* true to the practices that they knew would achieve results.

Yet, in the process of this tinkering and strategizing, teachers and leaders were prone to falling back on their inherited understandings, relying on their prior knowledge and experiences to "just do what needs to be done." For instance, a teacher might attempt to facilitate the goal-

setting portion of goal team using the protocol as designed, with a genuine desire for students to reflect on and select their own goals. When students struggled to articulate goals that were high-priority and realistic, or were reluctant to think through the path to achieving these goals, the teacher could go into divergent learning mode, discussing ideas with colleagues, trying out various modifications, and adjusting in the moment. When these modifications failed to make a difference, however, the teacher would likely wind up pushing students to choose goals that the teacher viewed as highest-leverage for the students' academic progress, and prescribing the path they should take to achieve those goals.

Some of this was due to a natural inclination to fall back on that with which one is already familiar and comfortable, but it was also due to an absence of conditions that would enable the teacher to take a different route to successful implementation. As one actor remarked, "When you've worn ruts in a road, it's hard to pull out of that, and the things that have gotten us success are the things we quickly go back to when things get uncomfortable" (Interview 27). Another actor agreed, "We don't have a clear picture, and so we've reverted back to something where we *do* have a clear picture, and we have experience" (Interview 15). Ultimately, it was up to teachers and leaders to implement *something* that was effective for their students, and if that meant gravitating back toward the familiar with little support to do otherwise, so be it.

Inherited organizational understandings. As with the construction of the Greenfield model and the development of its design, implementation was also complicated by inherited organizational understandings. The CMO's reliance on convergent learning behaviors for introducing a reform or innovation was itself problematic for implementing Greenfield, which required a balance of convergent and divergent learning behaviors, and the development of capabilities to support the latter. Compounding the reliance on convergent learning behaviors

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was an inclination to leverage existing practices, such as the PD systems and communication structures described above, exactly as they had always been leveraged, rather than using these structures flexibly.

As an example of the way in which this static use of organizational "best practices" complicated AF's implementation of Greenfield, we can examine the role of PD. Over the years, AF had carefully honed its scope and sequence for the content of PD, as well as established a specific recipe for conducting PD. The content varied somewhat year to year based on network-wide and school-based needs, but certain staples were considered foundational to effective teaching and learning (and to strong school results), and therefore always incorporated even if their particulars evolved. Like other organizational practices, these PD staples were imported to Greenfield.

In light of this PD inheritance, it was difficult to make space for new Greenfield-specific material. For instance, by prioritizing the school culture-type of content that had served its teachers well in the past, AF had to forego training on content that might address its new vision for Greenfield school culture. One actor, referring specifically to Greenfield's emphasis on "awesomely powerful community" in the context of its PD content, said,

> There is a lack of attention on student-teacher relationships [that]… I don't fully understand. There's no training on that. There's weeks and weeks of taxonomy training… [but nothing about] the work it takes to build relationships with kids. (Interview 26)

This actor struggled to make sense of the rhetoric of love, care, and community that AF professed (often genuinely) for its students, with the absence of action devoted to ensuring that those values truly manifested in practice. Yet in an effort to maintain the strength of teaching moves derived from Doug Lemov's Taxonomy of Effective Teaching Practices, which were heavily focused on teacher-directed classroom management and culture and deeply ingrained in

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AF PD, training on other content specific to the new model – even that which might be critical to enacting Greenfield's core values and design anchors – was overlooked.

Similarly, because of its inherited approach to PD, it was difficult for AF to develop capabilities to leverage PD flexibly. For example, one teacher recalled asking if a percentage of PD time might be used more informally, for teachers to share best practices for implementing different aspects of the model. This use of PD would have been a significant departure from AF's norm, yet might have been a step in the direction of the "enabling conditions" (Van de Ven et al., 2008, p. 65) necessary for divergent learning. But such opportunities were rare, if present at all. Accustomed to a top-down method of PD in which network leaders and designers created and led a large portion of training sessions, then turned over the rest for school leaders to facilitate, AF seemed unwilling – or perhaps unaware of alternatives – to make a significant change in the way it "did PD."

To expect Greenfield players, already burdened with their own individual understandings of "doing school," to then implement a novel model while using inherited organizational systems and practices, was an unrealistic expectation. Further, to expect Greenfield to emerge as an innovative school model still pure in form – all without explicitly addressing the modes of learning employed for implementation – was similarly unrealistic. Thus, teachers and leaders naturally began to revert to their inherited conditions.

Conclusion

The result of Greenfield's implementation as enacted was a hybrid school model. Animating Greenfield was a wildly uncertain and unfamiliar process, swathed in pressure and complex at every turn. Without knowledge and support for the divergent learning behaviors that would help them navigate this process, school leaders and teachers fell back on their inherited

conditions, leaning toward those practices they knew would achieve reasonable academic gains

for their students. Thus, not only was the design of this model a layered combination of old and

new, as discussed in the previous chapter, but the model *as implemented* was layered and

blended as well. An interviewee summarized brusquely:

> Let's be clear. Greenfield is AF Classic with expeditions [and] a structured goal team time that has goal setting. I would say the biggest differences are split classrooms, classroom size, and built-in time for goal teams, where you could use Circle, goal-setting work, and expeditions and enrichments. Outside of that, it's pretty Classic. (Interview 16)

This was the proverbial "Classic with a twist" (Interview 2) or "Classic 2.0" (Interview 27),

foreshadowed by the process of constructing the model, and by the design itself.

For some stakeholders, this hybrid result seemed organic, and a healthy example of

setting the bar for a novel model far from where it began (i.e., far from AF Classic) and allowing

it to gently slip toward a happy medium that would, ideally, represent the best of both school

models. For others, the result was a concerning example of "assimilation" (Interview 27) and an

upsetting retreat from Greenfield's initial, bold vision and goals that ended in a weak, nebulous

"school of compromises" (Interview 23). A third perspective framed the hybrid model as a

necessary first step in a much larger progression:

> Innovations don't just happen, poof, out of thin air. They build on something that came before. Along every dimension of where I think schools need to go, I see the Greenfield model moving. Students *do* have more ownership over the learning. Parents *do* have a different role. There are different modes of learning that are happening. Teachers play different roles, not just one. We use technology in ways that are more highly inventive. The expeditionary thing. The walls of the school are not the container for all the learning. Those are real. Could I see it pushing further? Absolutely… To me, innovation is a journey… This is the first inning of a nine-inning game. (Interview 18)

Each of these viewpoints had merit, and the third perspective spoke to an important truth: year

three of Greenfield was still early in its existence. As actors continued to iterate on the model,

there would be more opportunity for Greenfield to shift closer to or further from its AF Classic predecessor, or to solidify as a hybrid model.

Regardless of one's stance on Greenfield as a hybrid model, there was no denying that this result did not match the original intention. Greenfield was an ambitious endeavor with lofty aspirations attached, and there was frustration and disappointment when it did not deliver on those goals. One actor, reflecting specifically on the social-emotional learning and student culture initiatives of the new model, said, "We thought it was going to be mind-blowing, life-changing. Now, we find that… we're still having some of the same problems that we've always had" (Interview 6). Greenfield was not seen as a perfect school model, of course, but it was seen as a model that could solve the significant problems with which AF had been grappling. Yet Greenfield barely scratched the surface of these problems.

My analysis suggests that this outcome was not unexpected. "By definition, an innovation is a leap into the unknown" (Van de Ven et al., 2008, p. 66), and the unknown inherently involves uncertainty and complexity, ambiguity and tumult. In such a context, variation drives learning. But AF, holding steadfast to its inherited mode of convergent learning, tried to minimize, rather than maximize, variation. Without adequate learning processes in place to manage the challenges and unknown of innovation, teachers and leaders inevitably began to revert to their inherited understandings, which made Greenfield increasingly vulnerable to the "old" ways of AF Classic. Greenfield actors had to find a way to animate the model that worked for them and for the students in front of them. And so they did: "Classic 2.0."

In the subsequent chapter, I share a brief epilogue of Greenfield's status at the time of this writing, then revisit the analysis of my findings before shifting into a broader discussion of AF's approach to innovation and the consequences thereof. I step back to consider why AF

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tackled Greenfield as it did, why it encountered such a steep learning curve, and why it made

certain choices in response to the challenges it faced.

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CHAPTER VII

Discussion

Over the past three chapters, we have traced the course of the innovation journey Achievement First (AF) took with its Greenfield Project. From the initiation and construction of the new model, to the development and refinement of its design, and finally to its animation, a common set of factors surfaced that complicated AF's journey at every stage. Pioneering as they were, Greenfield actors were ill-equipped to successfully navigate these factors – the learning imperative, inherited modes of learning, and inherited conditions – and the dynamics between them. Absent a learning-to-learn infrastructure and the development of capabilities for actors to tackle innovation in the requisite ways, AF struggled to distance itself from its original AF Classic school model, and from the systems, structures, and practices largely responsible for that model's success. Individual players, too, struggled with this gravitational pull to the familiar, and, lacking either knowledge or support to proceed otherwise, inevitably began to revert back to their inherited understandings of "doing school." Despite best intentions and extraordinary effort, the organization was not able to meet its articulated vision for Greenfield. Instead, it produced a hybrid model: part Greenfield, part AF Classic.

In this chapter, I delve further into what transpired with AF's ambitious efforts. I begin with an epilogue that captures a distinct moment in time for the Greenfield Project: the (unofficial) end of its innovation journey. Next, I reprise the analysis of the prior three chapters

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to ensure firm footing before stepping back to dig beneath that analysis. I conclude by reflecting

on the rationale behind the innovation approach itself, and pose three conjectures as to why AF

chose the approach it did with Greenfield, as well as recognize alternative approaches that AF

chose not to employ with its Greenfield venture.

Greenfield Epilogue

In their study of innovation, Van de Ven, Polley, Garud, and Venkataraman (2008) write,

"Innovations terminate when they are implemented and institutionalized… or when resources

run out" (p. 58). In the most literal sense, both of these explanations held true for the end of

AF's innovation journey with Greenfield. This is, of course, an oversimplification.

Achievement First did not actually "run out" of resources for Greenfield, nor was there ever a

point when actors brushed their hands off and said, "Greenfield is implemented, it's

institutionalized, we're done." At the time of this writing, however, a major turning point had

occurred for the Greenfield Project, one that, in many ways, did indicate the unofficial

conclusion of its innovation journey.

Three significant events marked this turning point. First, the Greenfield model had

become entrenched as a hybrid model – "Classic 2.0" – and showed no signs of deviating from

that form to return to the original vision of a wholly novel model. It was, in this sense, becoming

institutionalized, albeit not necessarily in its intended form. Second, AF decided to cease

indefinitely (or possibly end completely) its work on the Greenfield elementary school model.

The original and only Greenfield elementary school, in fact, converted *back* to the AF Classic

model, thereby signifying the end of resources channeled toward what was initially a flagship

portion of Greenfield. Third, AF decided to shift away from school conversion, instead focusing

its attention and resources on new schools opened from scratch under the Greenfield umbrella,

and toying with the idea of modularizing specific components or sub-components of Greenfield to import to select AF Classic schools. In the subsequent sections, I elaborate on these decisions, their implications, and their significance as an inflection point for the Greenfield Project.

Classic 2.0

In the end, the pull of inherited conditions was just too much. Combined with a learning imperative derived from the innovation's enormous uncertainty and complexity, and the dominant inherited modes of learning that prevented Greenfield players from successfully meeting that learning imperative, the draw to the familiar overwhelmed. Inherited understandings of teaching and learning, student culture, coaching and professional development (PD), and operations, influenced Greenfield throughout each phase of its journey. These understandings seeped into the model's initial construction, shaping early brainstorms and prototype evaluation. They crept into the development of the model's design, producing components that, once fleshed out, bore a striking resemblance to the AF Classic model. Finally, these understandings dramatically filtered the implementation of Greenfield, yielding a model that, as enacted, was also a blend of the old and the new. One player acknowledged, "I think it's very easy to go back to what we know and to old ways of approaching the work" (Interview 27).

Yet this was not simply the path of least resistance or what was "easy." Given the aforementioned circumstances, it became the only tenable path for Greenfield actors, especially those charged with animating the design. And, once this track was pursued, it was difficult to backtrack or stray from it. While Greenfield by name, the model was "AF Classic with a twist" (Interview 2) in practice, and this fusion of the old and the new was visible across nearly all elements of the design.

Walking into a self-directed learning (SDL) math class, for example, I observed the following:

> As math SDL begins, the teacher gives a "credit" [a positive notation that can be accrued for a reward within the school's extrinsically-based student culture system] to a student who is prepared with all three SDL pieces out and ready to begin (headphones, Zearn notebook, and laptop). On the board it says, "Where are we?" Students' names are written in yellow, red, or green font (with a smiley face if in green or yellow) with their current Zearn mission and lesson. The teacher updates which lessons students are on during the SDL block, in real time. She has also written the goal mission/ lesson for the week – where all students are striving to be. Once students begin working, the teacher actively circulates, prompting students as they work (e.g., "So you need to get a different strategy")… Later, the teacher reminds the class that they need to pass one lesson today to earn their paw print [also part of the culture system]. (Fieldnotes, December 2017)

Several years into the Greenfield Project, this was a typical SDL scene, and seen as exemplary set-up and facilitation for this instructional block. The teacher used paceline to determine who was "in the green" and therefore meeting the desired benchmarks and pace of self-guided instruction (i.e., proficient or advanced); who was "in the yellow" and therefore just slightly behind these benchmarks and pace (i.e., approaching proficient); and who was "in the red" and therefore significantly behind the benchmarks and pace. This distribution of the class was shared at the start of SDL in the name of transparency and motivation, not to embarrass anyone. Similarly, the clarity of the math SDL pacing goals for the week and the class was intended to motivate students and give them greater transparency and, subsequently, greater independence over managing their work. The teacher used the culture system just as she would at any part of the day: to give students feedback about their behavioral choices and reinforce that feedback with aligned rewards or consequences.

The degree of structure and control that permeated SDL exhibited all the hallmarks of AF Classic. What was originally envisioned as a time of choice and flexibility for students, when they "owned" their learning and selected the content, sequence, and pace of their work, had

transitioned to an extended independent work time, heavily managed by the teacher. Not only did this diverge from the vision of SDL, but it also clashed with the values behind this learning modality: strengthening habits of success such as curiosity, building intrinsic motivation, and granting opportunities for ownership and personalization of student learning. One interviewee, reflecting on the role of paceline in this context, articulated the gap between the vision and goals of SDL and what actually transpired: "I see the value of [paceline], but I also see some conflict between having kids feel tremendous ownership of their learning and being told you have to stay on pace for all of these things" (Interview 13). Indeed, although students expressed feeling greater intrinsic motivation in their SDL classes than their teacher-led classes, and appreciated the chance to increase ownership of their learning, they were constrained by the diluted version of SDL.

This type of hybridization – incorporating elements of the innovation and the traditional approach to form a model that was a mix of the two – was pervasive across Greenfield model. The AF Classic student culture practices, for instance, were a fixture in Greenfield. Even when the design team, at the end of the project's fourth year, worked to iterate on the culture practices and create a Greenfield "culture 2.0," ideas for the revised design still relied on extrinsic systems, heavy structure, and a high degree of teacher control – just in slightly smaller doses than before. Similar to student culture, goal-setting during goal team was also heavily prescribed, having evolved to a point where students selected their weekly goal from a drop-down menu of quantifiable options (e.g., completing a specific number of quizzes or modules) that aligned with paceline. Even the academic program leaned further toward the AF Classic curriculum. There were marked differences here and there, but also huge areas of overlap, and

the Greenfield design team sometimes decided to incorporate entire chunks of the Classic curriculum into the Greenfield academic program as is.

Nowhere did the Greenfield model feel untouched by AF Classic and purely Greenfield. And, in discussions of continued iteration on the model or of the model's expansion to other grades, there was no hint of a dramatic departure from this Classic 2.0 version. It was assumed that future development and expansion of Greenfield would build on this template. The hybrid model, then, though by no means "finished," had nonetheless become institutionalized in its hybrid form.

Cease Work on Greenfield Elementary

A second major event marked a turning point in the Greenfield innovation journey: the decision to cease work on the elementary school portion of the model. In the winter of 2019, AF determined that, beyond the end of the school year, it would no longer devote resources to supporting and sustaining this division. Any elementary school-specific curriculum design or model refinement was quickly concluded, and only minimal Greenfield design team support was provided for elementary teachers and leaders for the remainder of the semester. No longer, at least in the foreseeable future, were there plans to expand the Greenfield elementary school model to other schools within the AF network. Moreover, the single existing Greenfield elementary school – the K-4 portion of the conversion school that was the focus of this study – was designated for conversion *back* to the AF Classic model, perhaps retaining a few discrete pieces of the Greenfield model (e.g., dream team), but nothing more. This reverse-conversion took place six months after the decision was made, once the school completed the current academic year.

Achievement First arrived at its decision regarding the Greenfield elementary model for several reasons. The organization felt that, at this juncture (winter 2019), it had gained traction with the model at the middle school level, but less so at the elementary. There was now a cohort of five Greenfield middle schools, including the original Greenfield conversion school with fifth and sixth grades, as well as four new Greenfield middle schools, each opened from scratch with a single fifth grade, and half of which now had a sixth grade as well. The players involved with the middle school portion of the model could reap the benefits of this cohort. There were opportunities for inter-school collaboration, as well as sufficient context to more effectively pinpoint the source of implementation gaps and challenges, and determine their remedy. In addition, the larger number of Greenfield middle schools, along with plans for expanding to seventh and eighth grades in the next two years, naturally granted that division of the model greater attention and more support for the continued development of its design and implementation. It seemed more efficient to focus resources and human capital on strengthening and expanding the one school division than distribute finite resources across two divisions, especially when the elementary division contained only a single school. Overall, Greenfield middle schools had strong momentum.

The single Greenfield elementary school, on the other hand, was still going it alone and struggling, and that was also a significant factor in AF's decision to focus on middle school. There was no one reason for the elementary school's struggles, and it was difficult to precisely determine how much of its difficulties stemmed from one source rather than another. It was evident that a great deal of the school's challenges were due to its conversion from AF Classic to Greenfield, and to its being the only conversion school among its Greenfield peers. Moreover, as the only Greenfield elementary school, none of the cohort benefits existed to which the middle

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schools were privy. And, because this was the sole elementary school, it was difficult to discern if Greenfield simply was not a strong fit for the elementary grades, or if all of the other disadvantages this school faced (and the comparative advantages of its middle school peers) just made this idea feel plausible. The bottom line was that the Greenfield elementary school, over several years, had not gained the same type of traction as the Greenfield middle schools.

This decision was not made lightly, nor did its significance go unnoticed. It had major implications for the Greenfield Project writ large, as well as for the individual school community directly impacted. To the first point, the elementary model was deeply embedded in the Greenfield vision and blueprint from its earliest months; turning away from it indefinitely was a punch in the gut to all relevant players, and a major strategy shift. To the second point, the single elementary school community had already undergone a model overhaul several years earlier. All of the school's stakeholders – designers, leaders, teachers, students, and families – had poured an enormous amount of time, energy, and effort into seeing this model succeed in the school, and had experienced substantial challenges that accompanied the work. Moving on from this period, and from the repercussions that had ensued (e.g., major blows to student and adult culture, student achievement, teacher attrition, etc.) would not be easy, nor would it be a simple matter to convert back to the AF Classic model. Yet AF felt this was the right move for the specific school community, and for Greenfield writ large.

Shift from School Conversion

The third major indicator of AF's turning point with Greenfield was the organization's decision to shift away from school conversion. As mentioned previously, of the five Greenfield schools, only one was an established AF Classic school that then converted to the Greenfield model. The rest of the cohort was comprised of brand new schools opened with the Greenfield

model from the start. These new schools had built considerably stronger momentum than the conversion school, and much of that momentum was attributed to the absence of conversion (as well as to the other factors described above). Although the new Greenfield campuses certainly experienced challenges, those challenges were, as one actor noted, "less about change and more about newness" (Interview 22). There was widespread agreement that, as difficult as navigating the Greenfield Project was, it was just that much harder with a conversion school. One player bluntly summarized the general feeling of the organization: "'Let me be clear: we want new [Greenfield] schools, we do not want conversion schools'" (Fieldnotes, December 2017). For many reasons, full-scale conversion was seen as a mistake, and one that AF wanted to avoid repeating at all costs.

With no plans to convert other schools, AF decided to focus on two options for the future of Greenfield. The first option was to open additional new Greenfield campuses. As the network continued to expand, it would consider, for each new school, whether that school should be an AF Classic or Greenfield school. (As of this writing, no new Greenfield schools had been publicly announced beyond the existing five.) It would also tentatively begin planning for a new Greenfield high school, also to be opened from scratch. Between the expansion of the existing Greenfield middle schools to include seventh and eighth grades, and the possibility of one or more Greenfield high schools, AF did not seem in a rush to add other Greenfield start-ups, but it acknowledged the option nevertheless.

A second option for the future of Greenfield was to modularize the model and "phase in implementation of key model components over time" (Interview 22). At the time of this writing, that practice had already begun with the Circle component of goal team. Circle was seen as a particularly promising feature of the model that could stand alone from the other components and

be integrated into an established, non-Greenfield school. Initially, the adult Circle was piloted at a handful of AF Classic schools and, once that was deemed successful, AF decided to spread the practice to the majority of its schools the following year, as well as test out the student Circle in a dozen schools. Unlike its decision to convert an entire school to the full Greenfield at once, this was "a little bit more of a slow and steady 'How do we set this thing up to be successful?' approach" (Interview 22). Although this tactic was a far cry from the original vision for the innovation, it was considered a promising move, and one especially attractive in that it was low-risk and unlikely to bring with it the splitting headaches of conversion.

A turning point. These three events – establishing the hybrid Classic 2.0, ceasing work on the Greenfield elementary school model, and shifting away from school conversion – signified a turning point for the Greenfield Project. Although they did not indicate the end of Greenfield, they did, in some ways, indicate the end of the Greenfield innovation journey as originally envisioned. The entrenchment of a Classic 2.0 model was, in essence, a nod to its institutionalization, and to a sense of the implementation dust beginning to settle. The decisions to cease work on the elementary school portion of the model and to move away from conversion marked a move to divert resources from these initiatives and focus instead on strengthening and expanding the Greenfield middle school model and, eventually, the high school model. Additionally, and perhaps most relevant for this study, the shift away from conversion indicated the end of AF's investment in comprehensive, whole-school reform of its existing campuses, a development I discuss further in the final chapter.

Analytic Reprise

In this section, I reprise the primary takeaways from the previous three chapters. I highlight the core themes and dynamics that confronted Greenfield players and refresh my

argument for why these themes played out in this particular manner. In doing so, I lay the foundation for the following section, in which I then probe the rationale behind AF's overarching approach.

To analyze my findings in the preceding chapters, I employed a framework comprised of three central categories of factors that influenced the Greenfield Project: inherited conditions, a learning imperative, and inherited modes of learning. These factors were recurring and redundant, causing similar challenges and complications across the phases of Greenfield's journey. And, because of their redundancy, the factors accumulated to further exacerbate these problems and tensions as the journey progressed. Yet, despite recurrence and redundancy, the dynamics that surfaced in the interdependencies between these categories differed somewhat in the construction, design, and animation phases of the Greenfield model. In order to set the stage for my subsequent argument regarding the rationale behind AF's approach to Greenfield, it is crucial that the redundancies between these analytic categories, as well as the nuances in the dynamics between them, are clear. I revisit both aspects here.

Construction

Achievement First had aspirations of using "greenfield" design thinking to construct a novel school model that would address pressing environmental and internal issues. To pursue these aspirations, the organization sought to employ a methodical process, one marked by linear, sequential stages. What actually ensued was a modified, less tidy (though still fairly sequential) approach encompassing three dimensions: generate fresh ideas, leverage early implementation, and lean on the inherited AF playbook. Yet the dimensions of this approach (and of the intended approach, for that matter) were at odds with AF's aspirations for its new model because of three sets of factors I have previously identified. These factors – inherited conditions, a learning

imperative, and inherited modes of learning – muddied the work and prevented AF from achieving its goals.

Inherited conditions. When those responsible for the construction of Greenfield attempted to think outside the box, their thinking was naturally constrained by their inherited conditions. These individuals, like any set of stakeholders, came to this work with prior knowledge about and experiences with instruction and student culture. They were also influenced by AF's deeply ingrained organizational knowledge of instruction and culture, as well as of coaching, PD, and school operations. Although bold in their desire to brainstorm ideas that would not reflect their existing understandings of these aspects of schooling, stakeholders had no explicit support for doing so. Suspending long-held beliefs was not so easy as peeling them from one's brain and setting them aside. Moreover, even if such suspense were possible, some actors were reluctant to fully abandon ways of teaching and learning or managing student culture that had "worked" for them in the past, and yielded strong results. Yet, with innovation, relying on previous experiences, intentionally or not, is likely to constrict stakeholders' fresh thinking and "limit the scope of the strategies they consider" (Aldrich, 1999, p. 92). Such was the case with Greenfield.

Learning imperative. The impact of these inherited conditions was compounded by a learning imperative generated from the novelty, uncertainty, and subsequent complexity of constructing a new model. First, this process was an act of pioneering; no peer school systems were attempting to construct a comprehensive, whole school, completely novel model from scratch – and certainly not while simultaneously running a full network of schools with their traditional model. There was no template for this process, nor was there internal knowledge, as none of the actors themselves had ever engaged in such work. Aldrich (1999) notes that, in this

context, pioneers "must discover or create effective routines and competencies under conditions of ignorance and uncertainty" (p. 228). Furthermore, actors "must learn new schemata" (p. 229), thereby creating their own templates for the work as they make sense of it. Neither is an easy feat.

Second, the process of constructing this school model, novel and uncertain as it was, also proved enormously complex. There was, for example, immense pressure to build something of high quality from the get-go in order to: a) address the multiple factors that motivated the initiative; b) exceed AF's prior record of success; and c) accomplish all of these things with urgency, because children's education hung in the balance. Additionally, in an effort to address multiple precipitating factors, Greenfield actors began to construct a model that was itself complex, with each element multifaceted and, again, new. Finally, the process of constructing the model was itself complicated. It was difficult to manage varied perspectives, all of which were cloaked in uncertainty. And, it was difficult to manage this novel, pioneering process against the familiar backdrop of AF's continuously operating Classic schools.

Navigating such uncertainty and complexity yielded a learning imperative. It required AF to learn a new approach to constructing something novel, one that could cope with these challenges. The organization's rational, linear model, while reasonable and effective under other conditions, was not so here. Different modes of learning would have been necessary.

Inherited modes of learning. Achievement First's plan for constructing Greenfield followed conventions of a rational, top-down, "RDDU" (research, development, dissemination, utilization) paradigm (Rowan, Camburn, & Barnes, 2004) that AF had leveraged when introducing previous innovations to its model, though nothing close to the scope of Greenfield. Moving from research to development and, eventually, to dissemination and utilization, and

doing so in an organized sequence, AF theorized, would serve it well in the context of Greenfield, too. This was the CMO's procedure for innovating, its inherited mode of learning how to do something new. It was a classic example of convergent learning, in which actors work top-down and linearly, aiming to whittle down ideas to get the innovation "right."

But I hypothesize that innovation of Greenfield's scale would require a cycle of convergent *and* divergent learning, with more of the latter in these early stages of construction. Divergent learning practices would push for diversity of perspective from across the organization's hierarchy, encourage exploration of fresh ideas, and embrace an uncertain, nonlinear process as "part of the game." With no experience in such learning processes, and no understanding that they likely were fundamental to large-scale innovation, AF leaned heavily on its familiar, inherited convergent learning patterns. Thus their approach was a poor fit for the task at hand.

Themes and impact. Several crucial and foreshadowing themes began to emerge in this early period of constructing Greenfield. Inherited conditions figured prominently, as did novelty, uncertainty, and complexity. A learning imperative was produced to navigate these features of innovation, but it went unmet because of those very inherited conditions, in this case an inherited mode of learning that relied entirely on convergent learning behaviors rather than on a blend of convergent and divergent learning. As a result, attempts at novelty – in process and product – immediately began to be thwarted. Although AF sought something innovative, it went about constructing that innovation using familiar, ultimately constricting, methods and ideas. This laid a foundation for Greenfield that would stick throughout its journey, inhibiting innovation and preventing AF from fully realizing its vision for a novel school model.

Design

Achievement First sought to develop Greenfield's design by homing in on elaboration and refinement of the model's novel, lightly sketched components. The CMO designated a Greenfield-specific design team and charged it with fleshing out these elements of the model, prototyping and revising them, and – increasingly as the innovation journey progressed – training and supporting school-level players in their implementation. Once the design began to take form, it became apparent that this was not simply an elaboration of the novel components featured in the initial Greenfield blueprint. There were not only novel components at play but, rather, a mishmash of novel and traditional components, the first developed explicitly for Greenfield and the second adopted more or less implicitly from the AF Classic model and from AF's previously held practices. These two sets of components, one cobbled onto the other, sometimes functioned in harmony, but more often in dissonance. They were, again, the result of familiar complicating factors – inherited conditions, a learning imperative, and inherited modes of learning – a result which, in turn, produced a different process and product than AF had anticipated.

Inherited conditions. A Greenfield-dedicated design team was created with the theory that, if a team focused solely on developing this novel design, team members' capacity and capability would be maximized in ways that "spurred innovation" (Interview 7). But this theory did not take into account the inherited conditions that these players brought with them, to say nothing of the inherited conditions of school-level and network-level players who provided input on the design. Aldrich (1999) writes, "Cultural norms and values permeate organizational boundaries via the personal history each member brings to the organization" (p. 156). In this case, it was a combination of personal history *and* organizational history that burdened

Greenfield actors and shaped their thinking around the design of Greenfield, thereby shaping the design itself.

Nearly every aspect of the Greenfield design had some type of parallel in, or sliver of common ground with, the AF Classic model or a model from the designer's previous experience. The dream team component, for instance, was the Greenfield version of a parent-teacher report card conference. Expeditions, one might argue, drew on the concept of meaningful field trips and authentic performance tasks embedded in the curriculum. Student culture, core academic subjects, and enrichment, though intended to be bent and stretched in new ways, were irrevocably grounded in actors' previous understandings of such areas. Although these conventional elements might be getting a fresh take with Greenfield, they were, nevertheless, often rooted in some inherited understanding of schooling.

Without explicit attention to such matters, it was difficult to prevent them from bleeding into the Greenfield design. These inherited understandings might spill into the design of a specific novel element, making it not actually so novel, or manifest in the layering of new onto old. Despite proactive efforts to separate the Greenfield design team from its AF Classic counterparts, there were no efforts to address the inherited schemata for "doing school" that were already deeply ingrained in these actors.

Learning imperative. The developmental period of Greenfield was enveloped in the same brand of novelty, uncertainty, and complexity as the model's early construction. Those tasked with fleshing out the model's design had no exemplars for what these components should look like once finished, nor for how they should fit together or how they might complement (or not) existing AF Classic structures and practices. The Greenfield blueprint was skeletal, outlining model components and shedding light on the goals and rationale behind them, but

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giving no information about what these components would actually entail. There was no one to support designers in their work, either with the substance of the finished product or with the routines and pathways that might help them get there, because there was no one internal who had this experience and no one external who was designing something quite like Greenfield. All of this had to be figured out as players went, among conditions of great uncertainty.

Complexity then piled onto the uncertainty. There was pressure to get the design "right" immediately, not only for the sake of addressing all of Greenfield's motivating factors and producing strong student outcomes, but also out of concern for the well-being of the school leaders and teachers who would animate the design. Designers were highly aware of the privilege and responsibility of their perch outside the day-to-day of school. They knew that, when some component did not work as intended, it was incredibly frustrating and discouraging for school-level players who had to *live* the inevitable dead ends, wrong turns, and genuine failures that are part of designing something innovative. These pressures were then exacerbated by the underdevelopment of the model, and by the fact that the emerging design seemed to include components that were challenging both in their interdependence and discreteness (i.e., some parts felt too intertwined with one another while other parts felt too detached).

Once again, Greenfield actors were faced with a learning imperative. They needed a way to manage the uncertainty and complexity of developing this design, as well as manage the inherited conditions that threatened to infiltrate their work. The organization's approach to developing something new, used successfully by AF's network-level designers and operations personnel in the past – albeit under significantly more certain conditions – did not jibe with this type of innovation.

Inherited modes of learning. With the elaboration and refinement of the Greenfield design, actors were trying to develop something totally novel without the mechanisms to do so. In his writing on the evolution of organizations, Aldrich (1999) cautions, "The greater the deviation from established forms, the more challenging the task of developing new knowledge" (229). To meet this task, designers and their colleagues needed to engage in the type of learning that promotes the development of new knowledge: divergent learning. This would assume acceptance of a messy, nonlinear approach that pushed actors to explore different ideas, embrace diverse perspectives from across the spectrum (i.e., network, design team, and school), and genuinely learn by discovery.

Achievement First, however, took the opposite approach, largely because the organization's inherited mode of learning something new relied on convergent learning processes. This dictated that actors strive for a neater, linear approach that pushed for consensus, and for narrowing down existing ideas for Greenfield's design via trial-and-error testing. Yet if "learning by discovery is a precondition for learning by testing" (Van de Ven et al., 2008, p. 81) – and much theory establishes that it is – then AF, in relying on its inherited mode of convergent learning, was skipping a foundational stage of the learning process: the stage most conducive to the development of new knowledge.

Themes and impact. Absent capabilities for a mode of learning suited to meet the learning imperative of this period of innovation, Greenfield actors made do as best they could. They developed the model's novel components in ways that incorporated fresh ideas and traditional practices, thereby producing a design that was truly layered, both within the components themselves (i.e., layers of new and old blending together) and across the model (i.e., novel, Greenfield-specific components layered on top of existing, AF Classic components). This

reinforced the precedent set in the early construction of the model. It further established

Greenfield as a theoretically innovative model that, because of the confluence of inherited

conditions, a learning imperative generated by novelty and uncertainty, and inherited modes of

learning, was, in reality, not so innovative, but rather an unintentional and somewhat haphazard

combination of old and new.

Animation

When Greenfield school leaders and teachers turned to the task of animating the new

model, they did so doubly burdened. First, they had to navigate the same challenging factors that

had clouded the previous periods of the innovation journey. Second, these school-level players

had to cope with the accumulation of these factors. In other words, they had to animate a model

that was already the product of such dynamics in its construction and development. In light of

this doubly fraught context for animating Greenfield, it is most useful to analyze the dynamics

between the usual factors by re-ordering them: first, examining the learning imperative; next,

inherited modes of learning; and finally, inherited conditions. By using this sequence, we begin

to see that, despite the best of intentions and enormous effort from those who constructed the

model and developed its design, teachers and leaders were not set up for success to implement

Greenfield.

Learning imperative. The learning imperative posed by the uncertainty and complexity

of the Greenfield Project reached its peak in the implementation period. Teachers and leaders

were handed a great deal of novelty – intricate, multifaceted, and seemingly never-ending in its

newness and iteration – and expected to quickly figure it out and teach it with success. As one

player reflected:

> It's really hard to get proficient at something if you're constantly being asked to do
> something new. Like, first time doing SDL, first time doing novel [fiction chapter book]

SDL, first time doing paired text and close reading, …first time leading goal teams, first time leading Circle, first time leading restorative Circle, first time leading dream teams, first time doing expeditions, first time doing dream teams in the *new* format… I think there have been just a lot of challenges associated with how much of it's been new and how much of it's been created. Then every time you change something there are ripple effects that you can't foresee because you don't know because you've not done it before. That also feels tricky. (Interview10)

Yet players were given few tools for executing all of these novel components proficiently. Once again, there were no close exemplars for this work because Greenfield was a unique design. School leaders were poorly positioned to coach teachers because they, too, were learning how to animate the design. It was difficult to plan in advance, because designers were also figuring this out as they went. There was no source of certainty, stability, or expertise to which Greenfield actors could turn.

Compounding the novelty and uncertainty was the complexity of this endeavor. The work was complicated by the pressure teachers and leaders felt to succeed – a pressure more direct and urgent than that faced by their non-school-level Greenfield colleagues, because teachers and leaders interacted directly with student and families every day. They experienced the successes and failures of this model with great immediacy, and saw these ups and downs reflected in the faces of their students. School-level players were hyper-aware of the premium still placed on students' academic achievement, regardless of Greenfield's other goals, and knew they had to find a way to stay accountable to those academic benchmarks.

These pressures existed amidst a process that was itself complicated. Teachers and leaders had varying levels of investment in and understanding of the work they were doing. This ambiguity was then made more difficult because the transition to Greenfield was itself framed as "adding on" to the foundation already laid in the AF Classic model, but the actual ask of Greenfield actors was much more significant than that. Thus the scope of change *and* the scope

of change management came as a surprise, further complicating this process. So, too, did the gaps that began to emerge in animation, such as those between design and practice. Absent precedent, it was hard to pinpoint the source of these gaps, and figure out how best to close them. In this light, myriad aspects of animating Greenfield required new forms of learning.

  Inherited modes of learning. Greenfield teachers and leaders met this learning imperative in two ways. First, they relied in part on the same inherited convergent learning behaviors that their colleagues had employed when constructing and designing the model. Such behaviors featured a top-down approach in which the design team developed aspects of the model, used an array of communication structures and, increasingly, PD, to disseminate the model to teachers and leaders. But school-level players, in trying to adhere to these processes to animate something innovative, recognized a mismatch. This was not "a world in which people know and, thus, do… [it was] a world in which people do and, thus, know" (Peurach, 2011, p. 231). Hence, teachers and leaders stumbled upon an alternative set of divergent learning behaviors to try to meet the learning imperative before them. They engaged in vertical and horizontal collaboration, as well as leveraged their observation and feedback system, to tinker with stubborn pieces of the model. And, they experimented in the moment, modifying lessons over the course of instruction to determine the best route for implementation by discovering it themselves.

  Although this pairing of convergent and divergent learning behaviors was a step in the right direction, it was still inadequate for the task at hand. Lacking a learning-to-learn infrastructure and specific capabilities for engaging in a cycle of divergent and convergent learning, teachers and leaders were not able to utilize this cycle purposefully or effectively. They could not be strategic about the learning derived from their instances of exploration, for

example, by incorporating it with the ideas handed to them by the design team. These actors were unable to move smoothly from divergent to convergent learning behaviors when animating a new element of the model, because they had no knowledge of how to do this – or even that they *should* do this. Thus, divergent and convergent learning practices were used, not in concert with one another and following intentional patterns, but instead in an unsystematic and largely ineffectual manner.

Inherited conditions. At no point in the process of animating Greenfield was explicit attention given to managing actors' inherited understandings of "doing school." These understandings were deeply and intentionally ingrained. Achievement First had methodically trained its staff in its playbook for learning and teaching, for student culture, for coaching and PD, and for operations. And this playbook had served the organization and its actors well, helping them reach lofty and admirable organizational and individual goals. Aldrich (1999) writes that "inherited traditions, custom, and habits drive many organizational and managerial behaviors" (p. 72). One could argue that they drive many individual behaviors as well. To think that these inherited conditions would not drive individual and organizational behaviors in the animation of Greenfield was a mistake.

Confronted with uncertainty, complexity, and the sheer difficulty and discouragement of taking on more and more yet feeling less and less successful, teachers and leaders began to slip back to their inherited conditions. When student culture seemed "out of control" and achievement took a dive, players reacted by falling back on familiar cultural practices that would impose calm and control, and would return attention to the business of academic achievement. When students needed academic intervention or preparation for state tests, players responded by borrowing time from enrichment classes as they had always done, not to slight the enrichment

program or be dismissive of Greenfield's essential outcome of "excellence in enrichment," but because this was a familiar solution that had paid dividends in the past. Furthermore, in both of these cases (as in many others), no authentic opportunity was given to explore alternative options, and to actively consider how to turn away from these well-trod roads. Thus, actors gravitated back to these roads.

Themes and impact. School-level players were faced with a dilemma. They were asked to animate something novel amid uncertain and complex conditions, and simultaneously asked to produce robust student outcomes. They were encouraged to tackle novelty in conventional ways, using familiar convergent learning processes through which ideas and strategies were disseminated to them and, with some training, then put into practice. Yet, the uncertain and complex conditions of the model rendered these convergent learning behaviors insufficient. In an effort to do right by their students and hold themselves accountable to AF's promise to its families, players therefore turned to divergent learning processes. They committed to doing whatever it took to animate the model successfully and promote student success, even if that meant tweaking model components and forging their own Greenfield path.

But two problems surfaced with this approach. First, there were no supports for these divergent learning processes; no infrastructure and tools were developed to help actors learn how to strategically conduct such learning, or to facilitate the learning itself. Second, no explicit attention was devoted to actors *unlearning* the deeply held inherited understandings of "doing school" that they naturally brought to this work. This proved a fatal combination. With no sound means or capabilities to meet a formidable learning imperative, and with great urgency and pressure to make Greenfield "work," teachers and leaders played with the design they were given and did their best to achieve set goals. In doing so, they inevitably reverted to familiar

practices that they knew did "work," and that they could feel confident using to produce the desired student outcomes.

This brings us to the point at which our epilogue, above, begins. The complicating factors that first surfaced in the construction of Greenfield – inherited conditions, a learning imperative, and inherited modes of learning – played out across all dimensions of the project, gathering momentum and strength as they did. What resulted in the end was a hybrid model, a mix of old and new cobbled together at every juncture. This model was an innovated version of the AF Classic model, but not quite the Greenfield innovation for which AF aspired. It was, ultimately, "Classic with a twist" (Interview 2).

Reflecting on the Rationale Behind the Approach

In ruminating on the overall experience of the Greenfield Project, an actor reflected, "I don't think I understood the magnitude of what we were changing… I don't think anybody realized how hard this was going to be… it is just a lot of change for people to swallow." The actor later returned to this point and clarified, "I knew it was going to be hard. I don't know that I thought it was going to be *this* hard" (Interview 10). Indeed, this twofold theme emerged consistently in my interviews and conversations with Greenfield actors: 1) They expected this work to incorporate change and to be very difficult; and 2) They were completely astounded by the scope of change and by just how difficult it was.

I use this section to explore the second point. To do so, I step back from the weeds of Greenfield to better understand what transpired at a macro-level and why it manifested as it did. While the "Analytic Reprise" section, above, provides answers to this study's crosscutting research question, *What complicates these efforts?*, it also invites a further question to push the analysis to a deeper level: *Why did AF leaders approach school improvement (primarily)*

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through a lens of comprehensive, blank slate innovation? In the case of AF's Greenfield Project, one might wonder why AF leaders chose to respond to external and internal motivating factors in a "greenfield" way rather than use an alternative, perhaps more evolutionary, approach – a version of which they had already adopted in continually improving their existing AF Classic schools.

There is no single, easy, or definite answer to this analytic question. A whole host of reasons likely influenced AF's decision to take this particular approach, despite possible alternatives (which I discuss later in this chapter). But given the evidence I have, I focus this section on three primary factors that were certainly present: a belief in the necessity of dramatic change; the appropriation of a particular logic of improvement; and the preservation of legitimacy. My hypothesis is that interactions among these three factors were instrumental in pushing AF toward blank slate change rather than an incremental approach.

Here, I unpack each of these conjectures, and explore their interconnectedness. I also briefly explore alternatives to AF's approach with Greenfield, contrasting these paths while also highlighting ways in which AF adopted aspects of these alternatives in their continued work with the AF Classic model. In taking up these issues, particularly the conjectures regarding the rationale for AF's choices with Greenfield, I begin to tease out how these issues featured critically in the degree of difficulty and change that so bewildered and surprised Greenfield players.

Necessity of Dramatic Change

One argument for comprehensive, blank slate innovation is its ostensive proportionality to the need at hand. For example, in the arena of school turnaround – itself an example of comprehensive school redesign – the theory behind the turnaround approach is that "chronically

under-performing schools need fundamental altering of structures, approaches, capacity, and (potentially) management and governance" (Calkins, Guenther, Belfiore, & Lash, 2007, p. 23). School improvement, by comparison, which assumes a more incremental approach to change, suffices for "mid-performing and below-average schools [that] can improve with coherent forms of program and capacity-building support" (p. 23). The greater the need (as the theory goes), the greater the change required, until eventually the need is deemed so significant that only dramatic, categorical change will do the job.

By most measures, AF was hardly considered a system whose schools required turnaround or comprehensive overhaul. As described in earlier chapters, the CMO was known for just the opposite: high-performing schools that defied expectations in low-income communities, and did such work at scale. It was an organization that had been able to respond to reforms in its environments and to the demands of the market over time, continually strengthening its AF Classic model to further student achievement. In fact, AF had the type of high-performing, high-poverty schools whose practices other schools and systems, particularly those that were struggling, often sought to emulate.

After students' state test scores tumbled with the first Common Core State Standards-aligned exams, however, the perception of AF – that is, the *internal* perception – changed. Because the Common Core made AF actors feel that their model and approach to teaching and learning were "not a little bit off" but "*really* off" (Interview 8), there was suddenly a sense that their schools required comprehensive innovation fueled by blank slate change; incremental improvement would be insufficient. One actor explained:

> [AF] didn't think that they could continue doing the model as it was and have teachers have a doable job and the slope of line [of increasing student achievement] going steep enough… I think the sense was, given all of that, we need some new thinking, so let's

figure out a new school model; let's start over. Literally, that's why it was called Greenfield: If you had a green field, what would you build? (Interview 4)

Another actor concurred, recalling the question posed to those charged with constructing Greenfield, "If we knew then [when we developed the AF Classic model] what we know now, what would we have built? Let's just take the academic exercise of starting over again and then see where we are" (Interview 11). For AF players, the nosedive in students' test results (plus the plodding rate of improvement for alumni's college persistence) combined with the reality that, individually and organizationally, AF was already working diligently, strategically, and urgently to effect change, seemed to provide evidence that dramatic change was necessary.

Thus, environmental pressure – here, pressure stemming primarily from the introduction of the Common Core – had an enormous influence on AF's decision to embark on the Greenfield Project, and to do so in a particular way. The Common Core-influenced tests were not merely an iteration of the former state tests; they were categorically different tests. Moreover, the rhetoric of the Standards was fundamentally different from that of most states' previous standards. The emphasis on depth over breadth, robust conceptual understanding, and extensive critical thinking skills marked a shift from prior versions of state standards and assessments and, consequently, for school systems that had aligned instruction with those earlier standards and assessments. These standards and tests, then, implied enormous environmental change. And, according to AF's test scores – the lifeblood of the enterprise – AF was not keeping up with the scope of change. The organization therefore felt compelled to match the magnitude of its change efforts with the magnitude of environmental change.

Logic of Improvement

In selecting a blank slate approach to innovation, AF appropriated a particular logic of improvement. There is a revered narrative around the idea of comprehensive, from-scratch

school innovation, reflected in language such as "greenfield" and "transformation" or "school turnaround," all of which get at the idea of a fresh start and clean slate in order to effect dramatic change. Calkins et al. (2007), for instance, distinguish between *school improvement* and *school turnaround*, defining the former as an "incremental-change effort or an incomplete attempt at wholesale change," whereas the latter "involves dramatic, transformative change" (p. 10). This concept of transformation shuns incrementalism as inadequate to the task. It conveys the idea that, to achieve radically different outcomes, one must take a radical approach and start anew. This narrative of blank slate transformation had gained a strong foothold in education, especially in certain circles, particularly those focused on reform in high-poverty schools that historically had demonstrated a need for dramatic change.

Lindblom (1959), in his explanation of the branch method and root method for effecting change, makes a comparable and more granular distinction between an incremental (branch) approach and a greenfield (root) approach. He contends that, despite the wide appeal of the root method and the draw and (seeming) rationality of starting fresh, we have a great deal of evidence that innovation or comprehensive reform – in schools and otherwise – rarely, if ever, works this way. To the contrary, true innovation is nearly always incremental, though it is seldom popular or politically viable to frame it as such.

Yet despite this evidence, the mythology of blank slate change persists. Hess (2010a), arguing for an increase in "greenfield schooling," draws a connection between the term as used in education and in other fields.

> Greenfield is a term of art typically used by investors, engineers, or builders to refer to an area where there are unobstructed, wide-open opportunities to invent or build… In real estate, *greenfield* refers to a place of previously undeveloped land, one that is in its natural state or used for agriculture. In the jargon of software engineering, a *greenfield project* is a new application that operates without any constraints imposed by prior

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versions. A *greenfield labor agreement* is the first deal struck between a company and its employees. (p. 1)

He acknowledges that this is a term one rarely hears in American K-12 schools and school systems (Hess was writing several years before AF embarked on its Greenfield Project), and explains that creating optimal greenfield conditions in education would require "scrubbing away our assumptions about districts, schoolhouses, teacher training, and other familiar arrangements so that we might use resources, talent, and technology to support teaching and learning in smarter, better ways" (p. 1). Of course, my research suggests that such "scrubbing" is much easier said than done – if it is even possible at all. But the confidence with which Hess recommends this prerequisite for greenfield conditions is indicative of the traction this notion had gained within the field of education.

Although Hess (2010b) does not advocate that greenfield schooling requires education entrepreneurs to "seek to do everything and launch a new 'whole-school' model" (p. 50), he does promote the idea of an innovative "solution for one problem that faces students, teachers, or schools" (p. 50), precipitated by greenfield-type "scrubbing" of our inherited notions of schooling. To underscore his point, Hess (2010a) quotes High Tech High (a CMO in San Diego) founder and CEO Larry Rosenstock on the merits of greenfield schooling:

> "There might be some complications and risks to new school creation, but as complicated and challenging as it may be, it is way easier than trying to turn around a pre-existing school… Because pre-existing schools are ossified by culture, employment agreements, expectations, and so on, building on greenfield is actually far easier." (p. 2)

Hess goes on to cite examples of education organizations that he perceives as having successfully launched via this greenfield approach, such as KIPP (Knowledge Is Power Program) Public Charter Schools, New Leaders for New Schools, the New Teacher Project, Teach for

America, and High Tech High itself – all familiar peer institutions to AF. These examples, then, only serve to perpetuate the myth.

Achievement First, like many other organizations, subscribed to this myth. It was a myth that enjoyed currency in AF's particular corner of public education, and therefore a promising solution to the CMO's perception of the problems it faced in light of significant change in the environment. Cohen, March, and Olsen (1972) observe that, when making decisions about fit between problems and solutions, we typically picture a rational process – similar to Lindblom's root method – in which an organization generates possible ideas, explores and evaluates their consequences, and thereby methodically reaches a decision. But, the authors admonish, "this type of model is often a poor description of what actually happens" (p. 2). Instead, most organizations are prone to pairing a specific problem with an existing solution – a particular, existing logic – that seems like a good fit, regardless of whether or not it actually is.

In this case, comprehensive, blank slate innovation seemed like a good fit for AF in part because it was a popular logic that held value and meaning among some of the CMO's peer institutions. Such institutional logics are more than strategies or solutions: "they are sources of legitimacy and provide a sense of order" (Thornton & Ocasio, 2008, p. 108). For an organization anxious to meet the disruptiveness of Common Core with something comparably disruptive yet also alluringly rational (Mehta, 2013), this logic offered a legitimate, culturally plausible model. As one interviewee nonchalantly described it, as if this were a common idea, "We took an open, green field and just built a school" (Interview 3). The data indicate, however, that pursuing such a logic was hardly this simple.

Preservation of Legitimacy

Achievement First appropriated a philosophy of comprehensive, blank slate innovation not only because the logic held purchase for those who initiated and constructed the Greenfield model, but also because the logic accorded a sense of legitimacy to the organization. Preserving AF's legitimacy mattered, especially in a time of (environmentally triggered) uncertainty. The CMO was an organization widely known for excelling in a number of areas. For example, it had a comprehensive system in place to develop teachers and leaders, and to do so effectively and rapidly. It had the know-how and operational capacity to successfully start new schools and quickly grow them to a point of stability. Most important, AF had the educational infrastructure and, in turn, instructional coherence, to enable considerable academic achievement for its students, and to do so at scale across its network of schools.

These elements, culminating in academic achievement, constituted much of AF's identity and legitimacy. The CMO leveraged its track record of academic achievement to cultivate legitimacy among external stakeholders, including funders, prospective students and families, and other schools and systems. Equally important, AF leveraged this track record to cultivate legitimacy among its internal stakeholders, including teachers, leaders, and current students and families. Maintaining this legitimacy was integral to continually attracting talent, students, resources, and respect within the market. And, because AF was perpetually anchored by the principle of "achievement first" – its mission, its promise, its entire raison d'être – any threat to that core principle of its identity (e.g., tumbling test scores) put its legitimacy at stake.

Such circumstances were bound to cause great uncertainty and urgency. Indeed, as my findings consistently show, there was an overwhelming degree of uncertainty and urgency that precipitated AF's blank slate approach to change in the first place. These conditions were ripe for the adoption of an approach by which AF could continue to cultivate legitimacy: the blank

slate approach popularized by some other reform-minded organizations. DiMaggio and Powell

(1983) write of this type of institutional isomorphism, "Uncertainty is… a powerful force that

encourages imitation. When organizational technologies are poorly understood… or when the

environment creates symbolic uncertainty, organizations may model themselves on other

organizations" (p. 151). By appropriating a logic similar to and already legitimized by certain

peer institutions, an organization stands to be "acknowledged as legitimate and reputable" (p.

153).

The symbolism of a greenfield approach was therefore significant. No matter that such

an aggressive change strategy may not actually have been suitable to the context at hand. As

Meyer and Rowan (1977) argue, organizations often adopt particular structures to "reflect the

myths of their institutional environment instead of the demands of their work activities" (p. 341).

By appropriating this blank slate approach and language, AF was essentially "affixing the right

labels to activities" (p. 350) to bolster its legitimacy. This signaled to AF's stakeholders a

certain understanding of "the change process" that was already validated by and shared among

others. It allowed AF to maintain the confidence of these stakeholders, and thereby "mobilize

the commitments of internal participants and external constituents" (p. 350) to this blank slate

approach. Such an approach was, among other things, a way for AF to preserve its legitimacy.

An irrational rationale. If Greenfield actors were consistently astounded by the scope

of change and sheer difficulty of their innovation journey, they were just as consistent in their

acceptance of the decision to take a comprehensive, blank slate approach to change. As an

organization, AF had firmly rationalized this choice; Greenfield players, whether they agreed

with the choice or not, were similarly clear on the rationale. The narrative that the organization

and individuals had constructed – one of overhauling the AF Classic model because data strongly

ascertained that trying out a new way of "doing school" was imperative – made sense to these and other Greenfield stakeholders. From many perspectives, the justification for this approach to change seemed cogent.

But in light of the research on organizational change and innovation, this choice was *ir*rational. The evidence from my findings suggests that other factors, then, were at play in this decision. Three key factors, in particular – a belief in the proportionality of dramatic change, the appropriation of a revered logic of improvement, and urgency to preserve the organization's legitimacy – interacted, perhaps unconsciously, to point AF toward a comprehensive, greenfield approach to change.

Alternatives

There were legitimate alternatives to the blank slate approach AF took with Greenfield. As alluded to earlier, AF might have taken a different, more evolutionary route in meeting the demands of the environment and its organizational goals. (In fact, AF did take a version of this evolutionary route with its Classic schools, but chose to pursue this route in conjunction with a greenfield approach in a small subset of its schools. I elaborate on this point below.) This idea of change or innovation via evolution is not new. Lindblom (1959) was writing of such methods in the 1950s, and arguing that an incremental, evolutionary, or "branch" approach to change was "superior to any other decision-making method available for complex problems in many circumstances, certainly superior to a futile attempt at superhuman comprehensiveness" (p. 88). In truth, Lindblom notes, "Democracies change their policies almost entirely through incremental adjustments. Policy does not move in leaps and bounds" (p. 84).

Similar to democracies, education organizations rarely "move in leaps and bounds." Although there is often pressure for school systems to do so, Peurach, Glazer, and Lenhoff

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(2016) write of an increasing understanding and appreciation of an incremental, networked approach to school improvement rather than one premised on a rational, rapid, "root" approach to change that seeks a quick and dramatic impact. The authors describe this alternative, "evolutionary logic" as consisting of a central "hub" organization partnering with "outlet" schools to produce a "knowledge evolution cycle" (p. 623) in which the hub and outlets collaboratively and iteratively work to create, refine, and replicate knowledge in order to yield continuous improvement. Such an approach assumes conditions of uncertainty and complexity – much like those AF experienced prior to launching the Greenfield Project – and it is particularly well suited to those conditions *because* of that assumption. The evolutionary logic is predicated on developing and recreating capabilities for divergent learning and dynamic problem solving among the outlet schools so that the hub organization can then capitalize on the emerging variation as a resource for incremental, large-scale improvement. It is a logic that embraces incremental change *in service of* dramatic, albeit likely slower, improvement.

Prior to, and contemporaneous, with the Greenfield Project, there were other education reform-oriented organizations and systems that were leveraging this approach. For example, Success for All (SFA), a Comprehensive School Reform Design (CSRD), was an organization that achieved early success, grew rapidly, and quickly hit limitations with its design. Recognizing that an over-emphasis on fidelity of implementation, particularly around novice practice, precluded expert practice and therefore constrained its ability to impact student achievement, SFA sought a means to dramatically improve its design, practice, and outcomes (Peurach, 2011; Cohen, Peurach, Glazer, Gates, & Goldin, 2014). At this juncture, the CSRD did not pursue a blank slate approach by, for instance, tasking an arm of the organization to start from scratch, nor did it proceed in the type of rational, RDDU problem-solving manner one

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might expect (Cohen et al., 2014). Instead, SFA took an aggressive but incremental, evolutionary path that "drove continuous improvement through concurrent action, reflection, and adaptation" (p. 95). Although the path was circuitous and required a great deal of "muddling through" (Lindblom, 1959), it drove a "revolution in the program that appeared both to increase potential for expert use and to position the organization for a new round of explosive growth" (Peurach, 2011, p. 139).

Similar to SFA's efforts, several established CMOs – charter systems comparable in many ways to AF – were also taking an aggressive yet evolutionary approach to improvement at approximately the same time that AF was scaling up Greenfield. These systems were moving toward formalized, network-based continuous improvement of the type advocated by organizations such as the Carnegie Foundation for the Advancement of Teaching and the Strategic Education Research Partnership Institute. For example, in 2017, the Carnegie Foundation recognized High Tech High, the CMO cited above, for its efforts to "establish improvement at the center of the organization's culture by analyzing bright spots of success, co-constructing goals to address school needs, designing and adapting protocols to scaffold the use of improvement tools, and establishing structures for school-level improvement" (Carnegie Foundation, 2020a, n.p.). The following year, the Carnegie Foundation recognized KIPP Memphis (part of the KIPP – Knowledge Is Power Program, also cited above) for its collaboration with other local CMOs, as well as with the curriculum organization Great Minds, in "using improvement science to improve literacy instruction and achievement" (Carnegie Foundation, 2020b, n.p.). These organizations formed a network – the Wheatley Learning Collaborative – to respond to shifts in K-8 English Language Arts instruction dictated by the Common Core, and to thereby raise student achievement scores. The Collaborative worked to

effect change by "using a series of teacher and leader practices designed to develop content and instructional knowledge over time" (n.p.) and, working in an evolutionary manner, began to achieve gains.

Conflicting perspectives. In this manner, education organizations and school systems within AF's environment were, themselves, somewhat conflicted regarding the best path forward for innovation and dramatic improvement at scale. On the one hand, some corners of the environment were touting greenfield approaches, as discussed above. On the other hand, continuous improvement of the sort suggested by the evolutionary logic was taking hold in other corners of the environment. And, in the case of KIPP and High Tech High, certain organizations were perceived (whether accurately or not) as doing both greenfield work *and* continuous improvement, though at different stages of their development. Yet, at the time AF embarked on the Greenfield Project, the "improvement movement" (Peurach, Penuel, & Russell, 2018, p. 479) was still nascent. The ideas behind the movement were stirring, the infrastructure for this type of improvement was developing, and some evidence of the appropriation and effective use of these ideas and infrastructure were emerging (Peurach et al., 2018). But the movement was new, nonetheless.

AF's dual approach. To some extent, AF itself proceeded with a light version of this evolutionary approach with its Classic model, as it had prior to Greenfield's existence. Throughout its history as a CMO, AF approximated some aspects of a continuous approach to improvement with its Classic schools. For example, like SFA, AF functioned as a hub, with a central office responsible for much of the design and redesign work that went into continually strengthening its outlet (AF Classic) schools. The hub partnered with these outlets not only to support their enactment of new designs, but also to support them in problem solving and, if

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necessary, slightly adapting those designs – and then learning from the resulting implementation. To be clear, AF did not appropriate the formal methods of continuous improvement exactly as described above. Moreover, the organization did not explicitly articulate this approach or specifically develop and leverage capabilities for continuous improvement. Instead, evidence suggests that features of incremental, evolutionary work existed tacitly, already built into the CMO's modus operandi. Centrally managed, incremental improvement was simply the way AF had always functioned, and, prior to Greenfield, this approach had been effective in attaining high levels of student achievement that aligned with the standards and assessments that preceded the Common Core.

In this way, while AF turned sharply away from incremental processes and toward blank slate change with the Greenfield Project, it also applied an incremental approach to its AF Classic schools. Working as such, AF made significant upgrades to the Classic model (concurrent with its Greenfield work), including strengthening the curriculum and "vision of excellence" for instruction; developing an "AP for All" course of study in its high schools; fortifying and standardizing school culture practices; and improving teacher and leader development (Achievement First School Leader Summit Presentation, March 2018). From this perspective, the organization never put all of its eggs in the Greenfield basket. This was largely because Greenfield was initially launched only in one conversion school and then a handful of fresh-start schools; AF, meanwhile, had thousands of children to serve in its other schools, all of whom needed and deserved an excellent education while the Greenfield model was built. But it was also due to AF's dedication to continuous improvement as an organization, to its success with incremental improvement in the past, and to its natural reliance on that experience as it moved forward with its AF Classic schools while simultaneously working on Greenfield.

Alternatives, overlooked. In light of the alternatives immediately preceding, one might

return to the initial question of this section: *Why did AF leaders approach school improvement*

(primarily) through a lens of comprehensive, blank slate innovation? Certainly, one might

wonder why AF did not focus solely on incrementally improving its AF Classic model – and it

did make substantial improvements to the model – rather than starting Greenfield at all. Or, once

AF committed to a significant project to procure dramatic change, one might ask why AF

seemed to overlook the alternatives available, those leveraged by organizations such as SFA,

High Tech High, and KIPP Memphis, or not consider these alternatives as possible solutions to

the problems it faced.

Such questions provide valuable fodder for future research, but go well beyond the scope

of this dissertation. My data suggest a few possible explanations, however. First, AF's primary

justification for its comprehensive, greenfield redesign – and perhaps for overlooking alternative

approaches – was, again, a strong feeling that dramatic change was essential to meet a dramatic

need. Many Greenfield actors felt that AF had hit a ceiling with its Classic model, and if the

organization only made improvements to that model, even dramatic improvements, the ceiling

might remain. One player clarified this rationale:

> I think the idea was that without starting Greenfield, we wouldn't be bold enough. We
> would make little changes and tinker around the edges, but we wouldn't take really bold
> risks. I think the idea here is to take really bold risks in a small, controlled way [i.e., in
> one or a few Greenfield schools] and then figure out what's really promising and either
> invite other schools to do aspects of it or the whole thing, or make some sort of hybrid.
> (Interview 11)

This perspective underscores not only the desire for AF to be bold in its change efforts, but also

its emphasis on being bold with only a small portion of its schools – and thereby continuing to

incrementally improve the rest of its schools in the meantime.

A second possible explanation complements the preceding one. Although the significant upgrades made to the AF Classic model did eventually pay dividends in terms of state test scores and college completion rates, those results had not yet emerged when AF embarked on the Greenfield Project. As with any improvement process, it took time to reap the rewards of those efforts. Thus, AF felt obligated to simultaneously make dramatic change using a greenfield approach commensurate with the degree of change in its environment, and with the degree of change it desired.

Further, it is important to recall that the "improvement movement" was only nascent at the time AF commenced the Greenfield Project. (For that matter, several years after Greenfield commenced, the movement was still only nascent.) Despite the fact that the principles of improvement science as advanced by the Carnegie Foundation (Bryk, Gomez, Grunow, & LeMahieu, 2015) existed in AF's environments and were tacitly present in the organization's own history, they may have been too tacit or emergent to gain proper visibility and legitimacy. Thus, AF may not have recognized ways in which the ideas and infrastructure of continuous improvement were gaining currency, let alone consciously considered and rejected them in favor of a greenfield approach.

Finally, even if AF did recognize improvement science as a potential fit for its needs, it may have been difficult to reconcile the pace of this approach with the urgency AF felt about improving student and alumni outcomes. The literature on continuous improvement consistently depicts it as a longer-term road to improvement (e.g., Bryk et al., 2015), one distinctly different from the notion of rapid change conjured by terms such as "turnaround" or "transformation." That pace may have just felt unacceptable in light of AF's commitment to quickly producing stronger test scores and college graduation rates, and its promise of such to students and families.

Conclusion

Upon close examination of AF's trajectory with the Greenfield Project, several critical points become apparent. First, AF had reached a turning point with Greenfield. The organization was committed to moving forward with the model, expanding it to all middle school grades (5-8) within its five existing Greenfield schools, and perhaps to a Greenfield high school, as well as potentially exporting particular discrete components of the model to AF Classic schools. But AF was moving forward with a Greenfield model that seemed firmly entrenched in its hybrid, "Classic 2.0" form – a far cry from the original vision of the innovation. Furthermore, while AF was expanding Greenfield to seventh and eighth grade, and possibly to high school, it had retreated from implementation of the model at the elementary school level. Last, and maybe most important, AF had abandoned (at least for the time being) whole-school, wholesale conversion, focusing instead on the aforementioned fresh-start Greenfield schools and modular Greenfield efforts.

A second key point of this chapter is the commitment AF felt toward a comprehensive, blank slate approach to dramatic improvement. Although the adherence to this philosophy was likely derived from multiple factors, evidence suggests that at least three of those factors interacted to become major drivers of this decision. These factors included: a) a deeply held organizational belief in the necessity of dramatic change to match the dramatic need at hand; b) an inclination to appropriate a logic of improvement rational in its mythology and popular with certain peer institutions and particular innovation-minded organizations; and c) an attempt to preserve AF's legitimacy, and the durability of that legitimacy, with external and internal stakeholders amidst conditions of great uncertainty.

This, in turn, surfaces a third crucial point: There were viable alternatives to AF's Greenfield approach. Despite the CMO's commitment to a blank slate, comprehensive course of action with the Greenfield Project, and its disinterest in pursuing gradual, centrally managed improvement (of the type it had previously employed and continued to employ with the AF Classic model) as its sole path forward, there was a third option afoot. This route would have resembled the evolutionary logic and principles of improvement science advocated by the Carnegie Foundation and used to effect change by organizations such as SFA, High Tech High, and KIPP Memphis. Adopting this methodology would have pushed AF to leverage the strengths of its established network – its strong educational infrastructure and instructionally focused central office that had enabled such coherence in the past – while developing design and problem solving capabilities in schools, and then mining the resulting variation as a resource for improvement. Such an approach would have moved away from AF's more traditional, top-down RDDU practices and moved toward a more empowered, equal partnership with school-level players. Change would have been slower and still uncertain and complex, for sure, but it might ultimately have been more dramatic, and the result could have been more in line with AF's original vision for Greenfield.

Finally, a fourth point must be acknowledged: AF faced a tough dilemma. Among the various factors that motivated Greenfield, the need to dramatically improve student achievement on state assessments continually rose to the forefront. There was tremendous urgency around this goal. Producing better test scores was fundamental to AF's legitimacy, to its market position, and, perhaps most significantly, to its ability to honor its pledge to students and families. This urgency and this particular end goal drove the organization's approach, and its trajectory with Greenfield, in ways often antithetical to what we know about how this type of

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dramatic improvement – and the learning and knowledge building it requires – typically occurs. Continuous improvement of the evolutionary variety is time-dependent; as the label implies, this approach is, by nature, meant to transpire incrementally over a period of time. Such a time-dependent path forward was at odds with the sense of immediacy AF felt and therefore created tension, constraining AF's options for improvement and limiting the tools at its disposal.

In the subsequent and final chapter, I pick up these threads to consider the larger implications and contributions of AF's experience with Greenfield. I look at the ways in which AF's Greenfield Project might come to bear on our expectations for innovation and dramatic change in American public schools and school systems. In addition, I explore the usefulness of this research, especially in light of the fact that we often black box the work of school improvement. Finally, I turn to directions for future research that might address questions raised in this study and might, in turn, provide new insights and provoke further questions.

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CHAPTER VIII

Conclusion

The purpose of this study was to investigate what it would take to pursue educational innovation that enables excellence and equity, particularly in high-poverty schools. I sought to examine how a school system might construct, develop, and animate novel, whole school models that target deeper learning, and I used Achievement First's Greenfield Project as a case study for these efforts. My research was guided by four core questions, with the fourth question cutting across the initial three: (1) *What approaches do education leaders use to construct such models?* (2) *What are the central components of these models?* (3) *How do leaders and teacher animate these models in practice?* (4) *What complicates these efforts?* Working sequentially, I unpacked the findings that addressed each of the first three research questions, then analyzed each set of findings through the lens of the fourth crosscutting question. In doing so, I developed an analytic framework comprised of three critical factors that complicate this work: inherited conditions, such as the inherited understandings of school culture and instruction that individuals and the organization itself bring with them to this work; a learning imperative derived from the uncertainty and complexity of doing novel, innovative work; and the challenges of relying on inherited modes of learning that are ill-suited to meet the learning imperative at hand.

Subsequently, I dug further into the analysis, seeking possible answers to a final question: *Why did AF leaders approach school improvement (primarily) through a lens of comprehensive,*

blank slate innovation? Achievement First had previously been using an alternative, more continuous approach to improvement across its network, and it continued to utilize this approach in response to significant concerns about student achievement and college persistence. Simultaneously, AF addressed those concerns via the Greenfield Project. Given this context, one might ask why the two-pronged approach at all, rather than concentrating solely on a path of more incremental, continuous improvement. My data suggest three conjectures that might explain AF's primarily (though not only) employing a "greenfield" approach to improvement and innovation: a strong organizational belief in the necessity of dramatic change to address the scope of the concerns at hand; the appropriation of a particular logic of improvement, seemingly rational as well as popular with some peer institutions and innovation-minded organizations; and the preservation of AF's legitimacy with external and internal constituencies during an uncertain and turbulent time in the environment. I hypothesized that the dynamics between these three reasons likely led AF to adopt a comprehensive, blank slate approach to change rather than, for instance, employ a more incremental or evolutionary approach.

In this final chapter of the dissertation, I consider the broader implications and contributions of these findings, as well as possible directions for future research. I begin by unpacking how this study might push educators, scholars, and policymakers to (re)calibrate expectations for the work of improvement and innovation in schools and school systems that strive for intellectually ambitious teaching and learning. In light of the data, I argue not for lowering expectations but for reshaping them, and for seeking alternative ways to manage features endemic to the work, such as inheritance and imprint, or uncertainty and complexity. Next, I discuss what use this research might be, given that we tend to black box the work of school improvement, particularly in often-difficult contexts such as high-poverty schools and

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systems. I then suggest directions for future research, especially that which takes up specific threads and questions raised in this study. I conclude with final thoughts about the dissertation as a whole.

Implications and Contributions

This dissertation, like many studies, simultaneously raises questions and provides answers. In the first part of this section, I focus on the raised questions and implications of my findings, pointing to ways in which we might learn from AF's experience with the Greenfield Project to inform our thinking about and expectations for school improvement and innovation. I explore questions raised about managing a school or school system's inheritance and imprint in order to innovate on its model, about ways in which strengths can manifest as weaknesses in this process, and about the likely struggles confronting most schools' and systems' efforts in learning to learn. I then segue to potential contributions of this research, both the answers it provides and the further questions it invites. In doing so, I unpack the notion of black-boxing school improvement work and dig into possible reasons for its prevalence. I highlight ways in which this study exposes aspects of that black box, particularly the messiness and complexity inherent in school improvement and innovation work, and consider ways in which these aspects might be addressed.

(Re)calibrating Expectations

Greenfield was an ambitious undertaking for AF. The well-established CMO had carefully honed its recipe for starting and managing high-performing schools in low-income, urban communities predominantly serving Black and Latino students, and its efforts to innovate on that recipe led to the pursuit of dramatic change. Yet such a dramatic departure from the existing model proved excruciatingly difficult. Therefore, the result of AF's Greenfield

endeavors (at the time of this writing) was not a dramatically different way of "doing school," but rather a hybrid model – "Classic 2.0" – that combined elements of the Greenfield vision with the AF Classic recipe, and operated in a small handful of AF middle schools.

This outcome raises questions about the efficacy of a greenfield approach to school improvement. It pushes us to reexamine the logic of a comprehensive, blank slate path to school innovation, and to reexamine our expectations regarding rapid, dramatic change in schools and systems. Moreover, it calls into question the resources and factors that might position a school or system to successfully embark on a path of change, given the obstacles AF encountered in its Greenfield work. I elaborate on these points below.

Managing inheritance and imprint. The inheritance and imprint of an organization matter. These features – the characteristics, competencies, systems, values, and general organizational knowledge and memory that an organization carries forward from its past – naturally persist, especially when left unattended. Organizations and the people in them are tenacious: they hold on to that which is familiar and in which they have invested, that which has facilitated their practice or yielded success in the past, and that which is so deeply ingrained as to warrant little notice or thought (Aldrich, 1999; Heifetz, Grashow, & Linsky, 2009; Van de Ven, Polley, Garud, & Venkataraman, 2008). Even when there is good reason to change, and when the skills, mindset, resources, and capacity for dramatic change are present in an organization, imprint and inheritance serve as roadblocks.

This case study sheds light on these obstacles in the context of school innovation and improvement, specifically. Despite AF's best intentions, despite its dedication of extraordinary time, resources, human capital, and genuine hard work to the Greenfield Project, it was not able to overcome the obstacles posed by its imprint and inheritance. At every stage of the project –

construction, development, and animation – inherited conditions filtered and colored the work of innovation, and pulled Greenfield actors back to the AF Classic way of doing school. At times, players seemed to acknowledge and grapple with these obstacles openly and intentionally. More often, however, the inherited conditions were so deeply ingrained as to be implicit, quietly and tightly woven into the organization's DNA.

Hess (2010) writes that a prerequisite for "greenfield schooling" is "scrubbing away" (p. 1) much of what we already know or assume to be true about education. From another perspective, one might interpret this to mean that we must "scrub away" our inherited conditions: our knowledge and assumptions of teaching and learning, of coaching and professional development (PD), of school culture and physical layout, and of all the other features that characterize education as we know it. Indeed, ridding ourselves of these inherited conditions, or finding a way to minimize their impact, would greatly facilitate attempts at educational innovation.

Yet, given the tenacity of imprint and inheritance, and given the experience of AF with Greenfield, one wonders if we can ever truly "scrub" our understandings and assumptions of doing school. Perhaps the focus, then, should be less on erasing a school's or system's imprint and inheritance and starting from scratch, and more on managing and capitalizing on its existing DNA. If we are destined to graft new ideas onto old schema, then it seems we may need to acknowledge that reality and leverage it. Rather than attempting to wipe the slate clean, education leaders may do better to build on what exists and seek incremental change, or at the very least, recognize the organization's existing DNA and actively incorporate its management into the broader work of change management.

Strengths as weaknesses. One might argue that AF was well positioned to initiate a new school model because of the organizational strengths it brought to this work. For instance, the CMO had polished structures and methods, at both the system level and school level, for supporting the work and mission of its schools. It had entire teams devoted to monitoring, improving, and sustaining this work, and to doing so from multiple angles. Furthermore, because AF was well established, it had experience coping with change in its environment while simultaneously addressing internal pushes for change; navigating reform was neither new nor daunting. Perhaps most important, AF had a strong educational infrastructure in place: common curriculum and aligned assessment; shared cultural practices and systems; and teacher and leader development grounded in these instructional and cultural programs (Cohen & Moffitt, 2009; Peurach & Neumerski, 2015). This infrastructure enabled instructional coherence across the entire AF network of schools, and played a large role in the system's success.

I contend the opposite. When it came to constructing, developing, and animating a novel school model, in many ways, AF's strengths manifested as weaknesses. Precisely because AF was so good at what it did, and had so carefully discerned the ingredients and refined the recipe for its success, it was extremely difficult to bend – let alone remove or substitute – its existing systems, structures, and practices to fit a new school design and new school goals. Consider, for example, the strength of AF's educational infrastructure. As I wrote in Chapter II, the design and use of educational infrastructure must fit the aims and scope of a school or system (Cohen & Bhatt, 2012). That was not consistently the case for AF. The alignment of structures and practices for instruction, assessment, and culture did not always match the goals of Greenfield. Nor did the systems for PD and coaching necessarily fit the needs presented by this innovation journey. And yet it was difficult to recognize that such powerful strengths, major drivers of AF's

success in the past, might not be strengths or drivers of success with the Greenfield model. Moreover, even if this conundrum were recognized (and at times it was, such as when Greenfield players questioned whether their PD practices and content were well-matched for the types of development that animating this novel model demanded), it was hard to take action and determine a viable alternative.

This propensity for strengths to manifest as weaknesses in school improvement should make us take pause. It should press us to recalibrate our expectations not only for how we approach change in schools and school systems, but also for how we determine what constitutes the strengths and criteria instrumental in embarking on such change. By illuminating this difficulty, I do not mean to suggest that schools and systems are better positioned for success with innovation if they lack educational infrastructure, or if they are inexperienced or under-resourced. That is hardly true, and the absence of these elements would likely serve only to further complicate and hinder this work. Rather, I highlight this dilemma to expose it as such. I aim to draw attention to the notion that the strengths of one school model may not translate easily to another. When seeking dramatic change in schools and systems, certain pillars or practices may prove to be weaknesses disguised as strengths. This, too, must be recognized and managed, along with imprint and inheritance.

Learning to learn. Organizational learning and organizational change are prerequisites for school improvement that yields ambitious instruction and deeper learning. Endemic to this type of change are qualities of uncertainty, ambiguity, risk, and complexity. These qualities thereby generate a learning imperative, not only because organizational members are being asked to learn new things, but because they are being asked to learn new things that are often complex, under conditions that are uncertain and ambiguous, and usually – in the case of schools – amidst

a climate of urgency and risk because children's education is at stake. These features of the work, in turn, necessitate a process of learning to learn in ways that may be unfamiliar and challenging, and this process demands a learning-to-learn infrastructure and the development of capabilities for such learning.

Achievement First had strong learning systems in place across the organization. These systems were found at the school and network levels, and targeted the myriad macro and micro types of ongoing learning that running a high-performing system of schools entails. For instance, AF had systems for quickly and strategically growing new teachers and leaders; for onboarding new staff members; and for developing, disseminating, and incorporating new ideas into the day-to-day practice of each school. One might imagine that these learning systems would stand AF in good stead as it embarked on Greenfield – a project anticipated to present ample opportunity for learning. Additionally, one might imagine that these systems, coupled with AF's characteristic humility and drive to improve, would pave the way for actors to learn by means conducive to the successful construction, development, and implementation of the new school model. But, similar to my preceding point about strengths manifesting as weaknesses, AF's learning systems did not translate so easily to the type of learning that such innovative work required. In fact, as I explained across the previous chapters, AF's inherited modes of learning frequently complicated, if not directly countered, its learning imperative.

There is no simple answer about learning to learn that we can deduce from AF's experience with Greenfield. We cannot say that one type of learning, say the "RDDU" paradigm of research, development, dissemination, and utilization (Rowan, Camburn, & Barnes, 2004), or the "evolutionary logic" (Peurach, Glazer, & Lenhoff, 2016) of improvement science advocated by the Carnegie Foundation for the Advancement of Teaching (Bryk, Gomez, Grunow, &

LeMahieu, 2015; Carnegie Foundation for the Advancement of Teaching, 2020), is necessarily the "right" way to approach the learning that accompanies efforts toward deep and lasting change in schools. Yet we can conclude with certainty that learning to learn factors prominently into the work of school innovation and improvement.

Likewise, we can infer that the development of capacity, capabilities, tools, and mindsets for such work are imperative to its success. My findings highlight the particular challenges of altering or shifting away from well-established modes of learning, and grappling with a new approach. They also uncover the difficulty of smoothly blending different approaches to learning, such as divergent and convergent learning practices, and lay bare the friction that can easily arise from such efforts. These features factor prominently into organizational learning and organizational change, and must be considered and addressed hand in hand with imprint and inheritance, and with the challenges of strengths manifesting as weaknesses.

Usefulness of the Research

Although this research does not provide clear or easy answers to questions about educational innovation, it does make several contributions to our understanding of this work. First, it reveals in great detail an approach to constructing a comprehensive, novel school model; the central components of one such model; and the "how" of animating that model in practice. Second, it highlights complicating factors for these efforts, and, per the "(Re)calibrating Expectations" section immediately preceding, draws attention to three particular implications regarding the management of imprint and inheritance, of strengths functioning as weaknesses, and of the problems posed by learning to learn. Third, this study allows us to better understand, dissect, and begin to expose the black box of school improvement. It is to this final point that I now turn.

Black box of school improvement. Historically, there has been minimal scholarship that digs into the nitty-gritty of school improvement and innovation, especially that which strives for intellectually ambitious teaching and learning at scale. This is due, in part, to the fact that such improvement efforts are fairly recent in the field; previous efforts toward educational innovation were simpler, more piecemeal, and generally less ambitious than many of the reform efforts underway today (Cohen, Peurach, Glazer, Gates, & Goldin, 2014). It is also due to an instinct to examine improvement efforts with a laser-like focus on a single feature of the work – much as practitioners have often preferred to employ a single innovation that they hope will yield comprehensive change – rather than study these efforts through a lens of complexity and interdependence (Peurach, 2011). Yet even with these caveats, given that we *do* know educational innovation is a complex and difficult thing which practitioners, researchers, and policymakers alike are eager to grasp and replicate, one might wonder what motivates us to largely black box the work of school improvement. Here, I unpack five factors that may contribute to this motivation.

First, as the Greenfield Project clearly demonstrates, the work of school improvement and innovation is uncertain, complex, and generally messy. Just as it is genuinely difficult for practitioners to sort through the tangled web of elements and conditions that press upon this work, so, too, is it challenging for researchers to untangle these threads. Added to this difficulty is the fact that practitioners and researchers may not want to pull back the curtain on such a messy endeavor. Revealing as much may make others reluctant to engage in or study this work. After all, who would want to wade into such a mucky and meandering enterprise? To undertake school improvement efforts with some level of ignorance about their inherent uncertainty, complexity, and messiness – and the particular challenges that accompany these features – could

potentially encourage people to pursue educational innovation. Of course, such ignorance often

backfires. As a Greenfield actor, quoted earlier, said, "I don't think anybody realized how hard

this was going to be" (Interview 10). From this reflection and others like it, one can infer that a

deeper understanding of the messiness this innovation journey entails would be helpful prior to

starting the work.

Second, there can be a high rate of failure in school improvement efforts. Even if the

overall reform or innovation is deemed successful, instances of failure abound along the way.

The iterative work of school innovation necessitates learning from mistakes, trying things,

tweaking or discarding them, and having the ability to rebound from failure. And, the entire

initiative, or huge components of it, may fail. Not only is this large-level failure difficult to

stomach in light of time and resources and human capital invested, but it is especially so when

faced with the reality that failure may impact students' educational success and the broader

context of their lives. To recall the eloquent explanation of one Greenfield player:

> To innovate you have to be willing to fail and get back up and try again. That's the nature
> of innovation, but innovating when something so precious as children are involved is
> incredibly pressure-filled because the fails can't be too big, right? The stumbles can't be
> too long. You can iterate. You can make things better, but if you *mess up* it has a much
> different impact than if I make this crappy version of an iPhone, and it fails.
> (Interview 26)

This reality of failure may make those enacting and studying the improvement process squirm.

Few people are comfortable with failure; even fewer are comfortable with making it public,

especially when it is high-stakes, and even more so when it is high-stakes and involves children.

This brings me to a third factor that motivates our black boxing the work of school

improvement: concerns of legitimacy and appearances. For systems like AF, a high-performing

CMO that relied on its legitimacy to maintain its market position and continually attract talent,

resources, and clients (i.e., students), the costs of exposing failure or messiness or uncertainty

could feel significant. (To that end, it is a testament to AF's humility and constant, burning

desire to learn, improve, and do better by its students, that it was open to my study and willing to

expose the inner workings and experiences of the Greenfield Project.) But even for a non-

"niche" reform (Cohen & Mehta, 2017) such as a traditional district public school system, or for

an individual school within that system – to say nothing of the educators within that school or

system – legitimacy and appearances matter. The success of school improvement efforts affect

teacher, leader, and school evaluations (and the potential consequences thereof); school

enrollment and resources; and decisions about supporting or sustaining the improvement efforts

or discarding them in favor of something else. When seen in this light, one can understand why

it might be preferable not to get too close to the actual work of school improvement.

A fourth factor is that research of this sort is legitimately hard to do for the researcher.

My research circumstances were unique because, due to my part-time curriculum design work

for Greenfield, I was somewhat embedded in the internal goings-on of the project. Such

opportunities are rare for a researcher. In addition, I was able to construct a study that allowed

close, regular, ongoing interaction with school- and network-level players over a significant

period of time (13 months) – also rare for a researcher. My partial "insider status" was greatly

beneficial, not only in helping me gain access to conduct the research in the first place, but also

because it allowed me to study this work while engaging in it (albeit part-time) as a participant,

shoulder to shoulder with Greenfield actors, and experiencing some of what they experienced. I

was, to some degree, actually *doing* the work of organizational change and learning, and *doing*

the work of educational innovation. This enabled an unusual degree of insight and empathy.

Furthermore, by engaging in this work and studying it over a significant period of time, I was

able to develop relationships and build trust with my colleagues and research participants,

thereby deepening my access and insight, and beginning to form a version of an informal research-practice partnership.

Finally, this type of research can also be difficult for the subject school or system and for participants of the research, for two key reasons. First, just as it may be hard for the researcher to devote such an enormous amount of time to data collection, so, too, might it be difficult for the school and larger organization to host the researcher for an extended period of time; it can be tough to live with a researcher and "be studied" week in and week out for more than a year. Second, the findings of the research itself may not be especially useful for the subject and participants. For example, the research questions may not be particularly compelling or aligned with their needs; the timeline of such work is slow (i.e., the longer one collects data, the longer it takes to analyze that data and then finally report on it) and may lag the pace of the organization's work and interests by months or, more likely, by years; and the organization and participants may prefer more engaged or collaborative research specific to their own questions, rather than the more traditional ethnographic type of study I conducted.

In consideration of these five factors, perhaps it is unsurprising that we often black box the work of school improvement. In fact, it may be more surprising that research has managed to bore into this work at all!

Exposing the work. Yet despite the rational appeal of black boxing the work of school improvement, the downsides of doing so underscore the importance of exposing the underlying layers of these initiatives. It is imperative that we uncover the innards of school improvement and innovation efforts that aim for ambitious instruction and deeper learning, particularly in low-income schools and systems where this work is likely to be most difficult – and most necessary. We must dissect these inner elements of the work to better understand what they are, how they

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enable or complicate this work, the dynamics between them, and how we can manage them. This study is a step in that direction.

Through the findings of this dissertation, we can begin to consider how we might cope with the tangle of challenges endemic to this work. For example, the factors described above that contribute to the black boxing of school improvement – the uncertainty, messiness, and complexity of the work; the rate of failure; concerns of legitimacy and appearances; and the genuine difficulty of the work for both the researcher and those participating in the research – are fixtures in improvement and innovation efforts, and in endeavors to study those efforts. That much is laid bare in this research. We must accept that, and use the data from this study and others to help shape our thinking about effective and ineffective ways to manage these factors. We must accept other conditions that press upon those trying to do this work, such as the feelings of urgency, risk, and vulnerability that individuals, schools, and systems face and which threaten to render this work nearly impossible, and seek ways to navigate these conditions. Similarly, we must acknowledge tension between the time-dependent nature of school improvement and innovation – regardless of the approach taken – and the urgency of the work, and devise ways to balance those competing priorities. Finally, we must recognize that this work requires learning how to learn, and therefore we must determine how to develop and sustain capabilities for continuous and oftentimes unfamiliar learning while still adequately serving the children and families before us.

These are, indeed, tall orders. In the next section, I explore directions for future research that might build on these points and further our understanding and exposure to the inner workings and experiences of school improvement.

Future Research

The findings of this dissertation have strong implications in their own right, as well as strong implications for future research. In this section I explore the latter, underscoring that any research of this type is incredibly difficult. I focus first on three lines of "basic" research (i.e., research of the more traditional variety, where the researcher is an observer or participant-observer – namely, a student of the work – as opposed to a collaborator or true partner in the work) that would allow further exploration of themes and questions raised in this study, and that would build on the findings presented here. I then turn to a fourth line of research, one that would involve branching into different genres of research and moving away from a traditional approach to studying this work. In exploring these four lines of research, I seek to address some of the imperatives described in the previous section, as well as the tensions and dilemmas embedded within the work of school improvement and innovation.

Continuous Improvement

In the previous chapter, I examined alternatives to AF's blank slate approach with Greenfield, and noted the promise of the more evolutionary route of continuous improvement. The brief examples of this work that I shared, such as the practices supported by the Carnegie Foundation for the Advancement of Teaching and Strategic Education Research Partnership Institute, and the specific initiatives of Success for All, KIPP Memphis, and High Tech High, provide a taste of what this work looks like in action. It would be useful, however, to closely examine additional examples of continuous improvement. One might study, for instance, the "how" of this work in schools or systems involved in networked continuous improvement, guided by research questions similar to those guiding this study, and seek to understand the experiences of a range of players (e.g., teachers, leaders) who enact or support this work.

Ultimately, research is needed that dives deeply into the processes of this work, moving beyond the high-level components and final outcomes.

More specific questions for study could focus on one of the following ideas. First, it would be worthwhile to explore and explain instances in which education leaders deftly manage the dilemma of whether to employ a blank slate approach that seeks dramatic change quickly and urgently, versus an incremental approach with which a school or system may be more likely to achieve its desired results over a period of time. And, it would be helpful learn more about how such leaders manage this dilemma nimbly and in ways that seem both responsive to their environments *and* responsive to the learning demands of this type of work. Second, it would be useful to zoom out from the more concrete and typical foci of school improvement studies, such as effective systems, structures, practices, and strategies, and zoom in on what Yurkofsky, Peterson, Mehta, Horwitz-Willis, and Frumin (2020) characterize as the more "invisible aspects of organizations (e.g., identities and relationships) that… are vital to organizational change" (p. 415). Given the importance of these "relational elements" in school improvement, it seems reasonable to give them greater attention in future research. Finally, it would behoove scholars to take advantage of opportunities for comparative studies that place a greenfield approach and evolutionary approach side by side, either across two schools or systems, or even within a single system. For example, AF itself presented such an opportunity, as it sought to address issues of student achievement and college persistence through a dual approach: a blank slate path with the Greenfield model and an incremental path with the AF Classic model. It would be fruitful to better understand the inner workings, experiences, and outcomes of both approaches within the context of a single organization, or to juxtapose these features across two organizations.

Learning-to-Learn Infrastructure

It is clear that dramatic school improvement, whether it occurs rapidly or gradually, requires capacity, capabilities, and tools for learning and, importantly, for learning to learn. Yet aside from a rare study such as Peurach's in-depth examination of Success for All (2011), little scholarship focuses on this area. As we saw in the case of AF's Greenfield Project, however, there is a strong learning imperative that accompanies school improvement and innovation; this type of change does not just happen. Therefore, it seems prudent for research to consider the development of learning capacity and capabilities within schools and systems, to unpack the "what" and the "how" of constructing and enacting a learning-to-learn infrastructure, and to seek to understand how schools and systems go about learning from their own learning. Doing these things, and doing them well, will be critical to future school improvement efforts.

Success Stories

Part of the rationale for my selection of AF's Greenfield Project as a case study for this dissertation was the organization's record of success. It is easy, both in practice and in the literature, to find examples of school reforms and improvement efforts gone awry, or of under-performing schools slipping even further post-innovation or intervention, especially in the high-poverty school systems where reform and improvement tend to be in particularly high demand. With my selection of AF, I sought a different path. And, although I doubt that many Greenfield players would deem the innovation journey an unqualified success – at least not relative to Greenfield's initial vision – there are certainly elements of this journey that were successful. Moreover, AF undertook this journey within a context geared for success, devoting considerable time, resources, and human capital to the project. Even if certain strengths, such as AF's established coaching and PD systems, sometimes functioned as weaknesses, it is noteworthy that

the organization entered this journey with a strong record of success, and that its strategy and actions with Greenfield demonstrated a continued commitment to success.

Future research should continue to seek and study success stories. It should go beyond schools or systems with a prior record of success, and pursue those that are *currently* making dramatic gains (on various measures, not only student achievement on state tests). This type of research should unpack the work that these schools and systems are doing to achieve dramatic gains, not just the "what" (e.g., reforms or "best practices") but the "how" (e.g., how they have organized and developed capabilities and infrastructure for this work). Recall that much of the uncertainty Greenfield players experienced was due to the absence of strong exemplars – or of any exemplars at all. We owe it to schools and systems to find these exemplars, shine a light on them from the inside out, and thereby enable others to learn from their experiences.

Branching Out

The lines of research described above reflect a fairly traditional role for the researcher and research participants, and therefore it would be worthwhile to also explore other genres of research that might capture the work of school improvement and innovation differently. Existing accounts of school improvement efforts do not always speak directly to the practitioners engaged in the work everyday. Thus, if this research is going to inform practice (which should be a primary goal), then it must be done in a way that is useful to practitioners and policymakers and engages their interests and questions.

My own genre of research, for example, while I cannot speak yet to its value to practitioners and policymakers, was instrumental in enabling me – through a somewhat unconventional researcher role – to learn about this work differently than I might have under more traditional circumstances. I was able to experience firsthand the exhilaration of innovating

and trying to push the boundaries of my thinking around elementary curriculum; the frustration and tedium (and occasional moments of victory) of constantly iterating, and sometimes throwing out months' or an entire year's worth of work to move in a more promising direction; the uncertainty and vulnerability of not knowing what was coming down the road, or even around the next bend; and the deep urgency that comes with being in classrooms and seeing how all of this innovation and improvement work actually pays off for children – or, quite painfully, how it does not. Such powerful firsthand experiences, in turn, permitted me to analyze my findings through a unique lens, and likely led me to draw different conclusions and make different interpretations than I would have if situated more conventionally in the study. These differences, I hope, stand to increase the potential value of this particular study – and, I expect, the value of other studies of this ilk – to those in the field.

Branching out from "basic" research could take multiple forms. Several of these forms would involve pursuing engaged, participatory research that both adds more immediate value to those being studied and builds the type of relational trust on which such research depends. This could manifest as a research-practice partnership, "such that practitioners have better access to research as they embark on improvements, and researchers can generate better theory through sustained and iterative collaboration" (Yurkofsky et al., p. 422). Examples of this partnership include varieties of internal, collaborative inquiry guided by an external research partner, such as the Data Wise process for improving data-driven instructional practices, or the processes of improvement science as enacted by networked improvement communities.

A research-practice partnership could also manifest as developmental evaluation, in which the researcher serves as a "knowledgeable-and-critical friend" (Peurach, et al., 2016, p. 616) to participants in the research, employing methodology that:

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> [H]elps identify the dynamics and contextual factors that make the [innovation or improvement] situation complex, then captures decisions made in the face of complexity, tracks their implications, feeds back data about what's emerging, and pushes for analysis and reflection to inform next steps, and then the cycle repeats. (Patton, 2011, p. 30)

Such research would, unlike the typical evaluation of school reforms (which usually focuses on the impact of the reform), recognize the complexity and uncertainty that undergirds improvement efforts, and aid the school system or school improvement network being studied in laying the foundation for this work by "improving the production, use, and management of intellectual capital in the service of large-scale education reform" (Peurach et al., 2016, p. 607). In other words, this would be a type of research-practice partnership geared toward building and supporting the learning-to-learn infrastructure described previously.

These alternative genres of research raise important questions about different types of knowledge production, and about what constitutes knowledge and empirical research when it comes to school improvement and innovation. They also push us to consider what it means to privilege practitioners as researchers. And finally, these alternative research genres encourage us to speculate about how we might better conduct research that is truly of value to those doing this work day in and day out, and how we might create the conditions that enable challenging and worthwhile research of this sort.

Final Thoughts

The work of school improvement and innovation, specifically that which strives for equity and excellence via paths of ambitious instruction, is hard to do and hard to research. This paper makes both points abundantly clear. But this paper also establishes the profound importance of such work, particularly for the low-income school systems that educate many of our most vulnerable and historically underserved students. Achievement First provides an instructive case study of an education system striving to do this work, and doing so in ways that

reflected humility, an openness to learning from and with others (and, significantly, an openness to sharing their own learning), a commitment to continuous improvement, and absolute dedication to providing all children with an excellent and equitable education. We stand to learn a great deal from AF's example, mindsets, and the substance of the work itself, both the failures and the successes.

This dissertation operates under the assumption that all children deserve access to opportunities for deeper learning, and all children can engage in and benefit from intellectually ambitious teaching and learning. As we look ahead to future research, it will be critical that we are thoughtful and equitable in how we investigate the work of school improvement and innovation. We must pay the closest attention to strengths-based models of this work, and especially seek opportunities for research in our high-poverty schools and systems, where this work may very well be the messiest, the most complex, and the most uncertain, but where these improvements and innovations are needed the most. Our children deserve nothing less.

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CHAPTER IX

Epilogue

In a note to my dissertation committee accompanying a near-final draft of this paper, I posed a question about a personal puzzle with which I was struggling. I acknowledged that, on the one hand, I had used the conclusion chapter of my dissertation to examine implications and contributions of this study, and to shed light on useful next steps for future research. On the other hand, I had shied away (in the conclusion chapter and elsewhere) from providing any sort of concrete "answers" regarding how best to grapple with and overcome the challenges that my research exposed. This was a deliberate choice. The study was meant to draw attention to the complexity and layers of difficulty associated with this work, and to provide context to help those involved in such work – especially the practitioners wrestling with this stuff every day – to navigate that complexity and difficulty. It was not meant to be a blueprint or unpacking of best practices. Nonetheless, from a practical standpoint, as a long-time educator now returning to the work of school leadership in a large, urban school system predominantly serving Black and Brown students, a system that is itself grappling with several of the challenges my research surfaced, I found myself thinking that some tangible answers about how to do this work effectively would be awfully nice. I asked my committee members if there was a way I could better manage this puzzle: the intentional absence of concrete answers yet the strong desire for them as a practitioner.

True to form, my committee kicked the question back to me. The committee members suggested that I consider how my own learning from this dissertation might add not only to the broader conversation surrounding dramatic change for deeper learning in public school systems, but also to the microcosm of that conversation echoed in my own school and within my own school district. There was an opportunity here for me to reflect on what I, personally, learned from the dissertation, and how my learning could be useful within my own professional context. Moreover, given the environment in which I completed the dissertation (e.g., against the backdrop of the COVID-19 pandemic and amidst a reckoning on systemic racism in America), the context into which I was stepping felt especially fraught, but also especially intriguing and ripe for contemplation. This epilogue, then, is a reflection on my own learning from this dissertation at a unique time in my professional context and in the larger environment.

Reflection

As I reflected on my learning from this dissertation, and considered the potential for application in the day-to-day of my role as a school principal, I reached three key conclusions. First, the magnetism of the greenfield schooling myth is a real and powerful thing. Second, continuous school improvement, in practice, turns out to be daunting – perhaps just as much as a transformational approach to change. Third, the setting for this work matters, even when one is considering this work specifically and solely within high-poverty school systems. I expand upon each of these conclusions below.

The Magnetism of the Myth

In Chapter VII, I described the appeal of comprehensive, blank slate innovation. When a school or school system perceives itself (or is perceived by others) as in need of significant improvement, notions of rapid and dramatic change, of overhaul, turnaround, and transformation,

are inviting. When internal or external pressure to achieve substantially better outcomes for

students begins to feel crushing, a greenfield approach may seem like the right path – or the only

path – to cope with that pressure. And when this logic of improvement does not simply exist in

the ether, but rather, is advocated by peer organizations or trusted partners or sought-after

funders, it gains traction and legitimacy, and seems a plausible solution to the problem at hand.

My dissertation illustrates, however, the sobering flaws in this myth. It breaks down this

logic of improvement, exposes its considerable faults, and tracks the manifestation of those faults

in practice. Furthermore, my findings are corroborated by the work of robust scholarship that

argues compellingly against the feasibility of comprehensive, blank slate innovation. Therefore,

as alluring as a linear "RDDU" paradigm (Rowan, Camburn, & Barnes, 2004) may seem for

effecting change, or as tempting as Hess's (2010) idea of "scrubbing away" (p. 1) our

preconceived ideas of schooling might be, both concepts – at least in the context of school

systems – ultimately prove illusory.

In light of this evidence, I should know better than to fall for this myth. And yet, in my

current professional context, I find the temptation great. The school system in which I now

work, like many of its peers, is low-performing, as is my school. To be clear, this school system

and school have powerful strengths: a strong vision for student success and increasing clarity for

the path to achieve it; families, teachers, and staff who are committed to their students'

achievement; and kids who are eager to engage in robust learning experiences. But they also

face equally powerful and systemic obstacles: the scourge of systemic racism in our country's

schools, the loosely coupled nature of the school system, and inequitable funding and

distribution of resources, among others. These systemic obstacles have been exacerbated by the

COVID-19 pandemic, with the consequences thereof devastating for our most vulnerable

students – many of whom comprise this school district's population. The push for increasingly

intellectually ambitious instruction and deeper learning for all students, already begun prior to

the onset of COVID-19, feels more important and urgent than ever. It also seems more

challenging than ever to attain.

But even when I recognize that a rapid, dramatic approach to change is unrealistic, I find

it difficult to resist. It is easy to get swept up in the narrative of this mythology and hard to

dismiss its legitimacy – especially in a period of palpable urgency, when I want so badly to help

position my students, families, and teachers for success. The magnetism of this myth is real and

unrelenting, and I must be vigilant to avoid succumbing to its pull.

Continuous improvement Turns Out to be Daunting

Given my skepticism regarding transformational change for deeper learning, coupled

with my cognizance of the myth's magnetism, one might imagine that an alternative approach,

such as the "evolutionary logic" (Peurach, Glazer, & Lenhoff, 2016) of improvement science,

would hold far greater purchase. Indeed, it does. This approach seems much more promising in

my own work. It strikes me as more palatable and practical to the practitioners asked to embark

on such organizational learning and change, as well as more feasible from the angle of

developing the requisite capacity, capability, and resources. In addition, as my school district

scrambles to define a path to reopening amidst the uncertainty of COVID-19, and I strive to

navigate the district's continually (and unavoidably) changing and zigzagging path on behalf of

my school, the notion of gradual change to our instructional mindsets and practices is appealing

– and something of a relief.

But even this preferred path turns out to be daunting. Incremental change feels

enormously uncertain, perhaps on par with the uncertainty of transformational change, albeit

stretched out across a longer period of time. Continuous improvement, although predicated on

biting off one piece of organizational learning at a time, is nevertheless incredibly complex and

layered work. It is also risky, causing me to wonder how the approach will fare over time, and

whether it will eventually yield the type of dramatic change that our school system needs and our

students and families deserve. And, taking an evolutionary approach to change raises ethical

questions, pushing me to consider whether moving slowly is actually the approach that is most

fair and just for all stakeholders, particularly those students educated in the early years of

organizational change.

Putting the preceding concerns to the side, at least momentarily, I also struggle to

untangle the knot of competing priorities that might shape such continuous improvement. From

this perspective, the charge to bite off only one piece of change at a time feels not like a relief,

but instead a burden. The urgency of the moment, the momentous task at hand, and, as a

Greenfield player reminded us, the particular pressure of "innovating when something so

precious as children are involved… because the fails can't be too big" (Interview 26), make it

especially challenging to determine where to even begin the path to continuous improvement. It

is hard to know which priorities to prioritize, how to sequence them, and what to do if I choose

poorly. Even if an evolutionary approach is more effective, it is by no means easy.

Setting Matters

When dealing with problems of deep change in schools, whether change of an

evolutionary or transformative variety, the setting matters. I write this not in reference to the

more glaring differences between the settings of urban, suburban, and rural school districts, or

between that of private schools and public schools, but within the bounds of low-income, urban

school systems serving predominantly Black and Brown children. Although such school systems

might serve similar student populations with overlapping needs, when placed side by side, one sees a continuum of differences across these systems – differences with profound implications for their ability to effect change.

On one end of the spectrum is a school environment – often the default in urban and, sometimes, rural, school systems – with a weak social technology of schooling, no common definition of good practice, and poor resources and support for achieving consistently good practice. In this sort of environment, one might ask: *How do you build the educational infrastructure to determine what constitutes good practice, as well as figure out how to obtain the education resources that will yield such infrastructure (and, in turn, enable good, coherent practice at scale)?* At the other end of the spectrum is a system such as Achievement First (AF), something of an ideal type in that, prior to the Greenfield Project, this organization already had strong educational infrastructure, a clear and coherent definition of good practice, and the affordances to achieve its educational vision. The problems of change are therefore different in an AF-type of system, and the question shifts to: *How do you engineer change in a strong, well-established system with a clear sense of what should be changed?*

My own school district more closely aligns with the former end of the spectrum. Thus, although my school is in the same geographic region of the country as the Greenfield school I studied, and my school system's student demographics are nearly identical to AF's, I have been struck by what a different ballgame my experience will be – and already is – in enacting significant change. Per the question posed above, my district is grappling to find the resources that might support major shifts in instruction, and has only begun to scratch the surface in establishing the type of educational infrastructure conducive to (and necessary for) these shifts. As a school principal, then, I must determine how to create the basic conditions for creating a

common definition of good practice in my school, and the structures for how to develop the mindsets and skills to enact such practices consistently. These questions must be answered before even considering what steps we might take next to continuously improve upon that definition of good practice and, accordingly, dramatically change and strengthen those skills and mindsets.

I juxtapose these two types of school system settings not to imply that one presents circumstances more or less difficult for change than the other, but to underscore that the problems such systems face differ more than they may initially appear. My own professional setting raises a host of questions that a charter management organization like AF had already answered – or never faced in the first place. Achievement First had already achieved the status of "high-performing" (by the social metrics of the time, such as achievement on standardized assessments), and already knew how to learn in ways that yielded strong outcomes. But its strengths, as discussed previously, could manifest as weaknesses when it came to major change, and its knowledge of how to learn was maladapted to the learning needed for this particular type of change. Regardless of the path to deeper learning that a school or school system selects, then, the path is winding, uncertain, and genuinely hard. But the particular setting in which one engages with this work shapes that path, and impacts the work considerably.

Moving On

By no means do my reflections discourage me or dissuade me from the work ahead. Quite the contrary. I feel energized and eager to apply my learning from this dissertation, and hopeful that it will enable me to approach this work in a more empathetic, strategic, and thoughtful way than I might have otherwise. I recognize that this is a turbulent and difficult time to be stepping into a school leadership role, and to be pushing for intellectually ambitious

instruction that promotes deeper learning. And yet I see a great deal of opportunity in this

moment as well. My eyes are wide open to the scope of the challenges before me, but I am keen

to apply the knowledge acquired from this dissertation in service of my students and families,

teachers and staff, and toward the broader initiatives of the school system. I remain fiercely

committed to the work before me, and ready to move on.

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Appendix A

Sample Interview Protocol, Round 1

Set-Up
- ❖ Thank you again for agreeing to participate in this study. As I mentioned before…
  (*Reiterate prior information shared about the study, its purpose, terms of consent, etc.)*
- ❖ Do you have any questions before we get started?

Warm-Up
First, I'd like to get a sense of your previous experience as an educator and with AF.
1. Tell me about your experience in education prior to this role.
   a. *How long have you been an educator? In what capacities? What did those roles entail (generally)?*
   b. *How many years have you been involved with AF/Greenfield?*

Content
Great. I want to hear a little more about AF.
1. Tell me about your experience with AF Classic. *(If possible, explore: pedagogy/ curriculum, student achievement and engagement, and school culture.)*
   a. *What went well?*
   b. *What didn't?*
   c. *What did you (leadership team, network) decide to do about things that weren't working?*

2. Is there any connection between the experiences that you just described and the development of the Greenfield model?

3. Let's talk about Greenfield.
   a. To your knowledge, what was the motivation to start Greenfield? Why not continue with AF Classic? *(Where did Greenfield come from?)*
      i. *Was everyone in agreement about starting Greenfield? About what Greenfield should look like?*
      ii. *What did you think?*
      iii. *Were you asked for feedback about Greenfield? Tell me about that.*
   b. What do you see as the goals of Greenfield?

         i. How do those differ from AF Classic, if at all?
    c. What are the key components of this model?
         i. You mentioned X goals. Do you think these components support those goals?

4. What's gone well with Greenfield? *{content/model + process}*
    a. What hasn't?
    b. What would you like to see moving forward in terms of new directions or next steps for Greenfield?

I'd like to hear a bit more about your own journey with Greenfield.
5. Tell me about how you see your role with this initiative.
    a. What does your role entail?
    b. How has your role evolved, if at all? How do you think it will continue to evolve?

6. What has been as you expected?
    a. What has surprised you?
    b. What have you found most rewarding?
    c. What have you found most challenging?

Cool-Down
1. Is there anything else you would like to share, or anything you would like to ask?

Thank you for taking the time to do this – I really appreciate it. I look forward to discussing this further with you!

Sample Interview Protocol, Round 2

Set-Up
- ❖ Thank you again for agreeing to participate in this study. As I mentioned before… (*Reiterate prior information shared about interview, its purpose, terms of consent, etc.)*
- ❖ Do you have any questions before we get started?

Warm-Up
When we last chatted, we talked a lot about X… {*AF Classic and the motivation behind Greenfield, and fairly broadly about the primary goals and structures of Greenfield, and what you felt was working and not working about them}*

Today I'd like to bring our conversation to more specific aspects of Greenfield.
1. Before we jump in, how are you feeling about Greenfield right now? {i.e., *What is your general mindset about the Greenfield model?}*

Student Culture
Great. I want to zoom in on student culture at Greenfield.
1. First, what does "student culture" mean to you/ to AF? *How would you define it (so we are working from a common definition)?*
   a. What would you say are the primary systems or structures that support GF student culture?
2. How would you describe Greenfield student culture? {*for school staff – at school; for network folks – generally across Greenfield} What's working well? What isn't?*
   a. In thinking about the current student culture systems/structures and the goals of Greenfield, do you see these as compatible or in conflict?
      i. *When I play this out in my own head, it seems Greenfield is using largely extrinsic systems (behavior, academic) to achieve goals around intrinsic motivation in learning. Can you help me see this from a different perspective? What am I missing?* → **Save until end, ask only if useful**
   b. If we're going to make Greenfield work, how could student culture be improved?
      i. *What challenges do you see in improving student culture?*

Imprint
I'd like to shift and talk about Greenfield in the context of AF.

3. How has AF as an organization, or the existence of AF Classic schools, enabled the Greenfield work?
   a. How has it constrained the Greenfield work?
       i. Looking back, what might have been done differently to reconcile this?
       ii. Looking ahead, what could be done differently now?

Scope of Change
Let's talk about the scope of this work. At various times, I have heard folks say about Greenfield that it feels like "we're just trying to do too much."
4. What does that mean to you?
   a. *What qualifies as "too much?" What qualifies as "just right?"*
   b. What do you think has AF trying to do so much?
   c. What could be done differently {*with the conversion process, etc.}*?
       i. *What place do you see for teacher and school leader input around this? For parent and student input?*

Innovation
I want to finish by hearing, once again, a bit more about your own journey with Greenfield.
5. When people talk about Greenfield – people both internal and external to this work – I often hear them use words like "innovation," "trailblazing," and "pioneering," even "pilot" and "laboratory."
   a. Do you see this work as innovative, or yourself as a pioneer? *What, specifically, feels innovative?*
   b. How do you feel about that?
       i. *What do you find challenging about the pioneering nature of this role or the innovative nature of this work?*
       ii. *What do you find exciting or enabling about it?*

6. What advice would you give to someone in your role who is preparing to embark on this type of school innovation?

Cool-Down
1. Is there anything else you would like to share, or anything you would like to ask?

Thank you again for taking the time to do this – I really appreciate it.