

An Algorithm for Reform: The Potential Impact of
Blended Learning on American Education

by

Maxwell Bigman
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In Memory of Paul Schaffel

I. Introduction

❖ *The Modern Reform Impetus*

It is no secret that the American public education system is in crisis. The statistics are alarming, particularly for underserved populations. Approximately three million students drop out of high school each year, and only 52% of Black males and 58% of Latino males graduate from high school in four years (Schott 2012).¹ These results are unacceptable in a nation that is supposed to pride itself on equality of opportunity. The American public education system is therefore not just in a state of crisis: it is failing. The glaring issue is that the school model remains essentially the same as it did a century ago, yet the demands of contemporary society cannot be met by a system governed by industrial era policies and structures.

The critical event that promoted education reform in the modern era was the seminal 1983 report, *A Nation at Risk (ANAR)*. In plain, dramatic language, this landmark publication warned that the nation's schools had not kept pace with societal and economic changes, and that dire consequences lay ahead for the country if education was not improved for all students. Above all, *ANAR* was a call to action. The authors eloquently captured the notion that "Learning is the indispensable investment required for success in the 'information age' we are entering," and promoted a vision of educational change driven by the twin goals of equity and excellence (NCEE 1983). Despite the myriad reform efforts since 1983, none of them

¹ In comparison, 78% of White, non-Latino males graduate in four years (Schott 2012).

has been successful in addressing the key problems of academic achievement and access to high quality education.

In the last thirty years, there have indeed been changes to the patterns of American education, but they have had relatively minor impacts on the larger system. Larry Cuban (2013) makes a clear distinction between incremental and fundamental reforms. *Incremental* changes are “amendments to current structures, not deep changes to or removal of these core components of schooling.... They correct deficiencies and improve existing structures” (p. 3). In contrast, *fundamental* changes are those that “aim to transform – alter permanently – those very same structures. The premise behind fundamental reforms is that basic structures are flawed at their core and need a complete overhaul, not renovations” (p. 3). In the history of American education, reforms have almost always taken the form of incremental changes. Meanwhile, efforts intended to fundamentally alter institutional patterns have either been rejected entirely, or adapted to promote continuity in the system rather than change.

The persistence of the traditional organizational structures of American public education in the face of sustained reform efforts points to a phenomenon that scholars call *dynamic conservatism*. According to Donald Schön (1970), dynamic conservatism represents the characteristic response of (established) organizations to take the path of least change in order to persist in the face of demands for change. Hence, dynamic conservatism helps to provide a framework for understanding the lack of fundamental reform in the American education system, as the complexity of the institution has allowed it to only adopt changes that maintain its stability.

Furthermore, this phenomenon highlights the intricacies of the K-12 schooling, which is comprised of overlapping and interdependent levels that work without any unit central control. Evidently, contemporary reform efforts will need to overcome such historic obstacles in order to match the American school system to the demands of modern society.

❖ *Plan for the Thesis*

The present work examines the potential for an emerging reform movement to incur fundamental change to the American public education system. The primary question that I seek to answer is whether the blended learning (BL) reform movement can transform the instructional model. Broadly speaking, BL in K-12 schooling uses technology as a tool in order to optimize classroom environments and personalize learning. BL instruction utilizes both face-to-face and computer-mediated instruction to offer a “pedagogical approach that combines the effectiveness and socialization opportunities of the classroom with the technologically enhanced active learning possibilities” (Dziuban et al. 2004, 3). Thus, BL rethinks traditional student and teacher roles in order to individualize instruction to meet the needs of each learner. (Chapter two will provide a more comprehensive working definition, and elaborate on the goals of the movement).

While the traditional approach to classroom instruction places the teacher at the center of learning, the BL movement seeks to shift the primary focus to the individual student. Once again, Larry Cuban (1993) offers a worthwhile framework for understanding the distinction between, what he terms, teacher- and student-centered instruction. A *teacher-centered* model means that a “teacher controls what is

taught, when, and under what conditions within a classroom,” as instruction is aimed at the whole class and usually relies on a textbook for “curricular and instructional decision making” (pp. 6-7). In contrast, *student-centered* instruction “means that students exercise a substantial degree of responsibility for what is taught, how it is learned, and for movement within the classroom.” Instruction typically occurs individually or in small groups “rather than being directed at the whole class,” while students get to choose from a variety of content and instructional materials (p. 7). These patterns of classroom practice are typically placed at either end of a continuum, leaving space for hybrids that incorporate elements from both models. Over the course of the last century and a half, efforts have been made to fundamentally transform the model of teaching to incorporate practices that are more student-centered. The concept has its origins in the Progressive emphasis on a child-centered pedagogy, and manifested itself in reforms such as the Activity Movement in the 1930s, and the push for Open Education in the early 1970s. Therefore, BL can be understood as a delivery mechanism that leverages the strategic use of technology in order to promote personalization, and shift the instructional model to a student-centered approach.

Therefore, my thesis seeks to understand why the BL movement will succeed where past reform efforts have failed. I argue that the present circumstances are markedly different than any other time in the history of American education, and that BL is uniquely suited to taking advantage of this opportunity. The first chapter discusses the Progressive education movement, which was the first sustained reform effort in the modern era of education. Accordingly, it serves as a point of comparison

for more recent attempts to alter the organizational patterns of schooling, and highlights the ways in which reforms interact the public education system. The second chapter seeks to provide a comprehensive understanding of BL. In particular, it examines the key features of the instructional model, and illuminates the movement's underlying goals. The third chapter explains how the BL movement stands to take advantage of the sustained challenges to the forces of dynamic conservatism in order to incur fundamental change. Finally, the fourth chapter analyzes the potential impacts that the BL movement might have on the public education system if it does indeed take hold, and discusses what implications such changes might have for American democratic society.

II. The Problem of American Education Reform

❖ *Introduction*

This chapter attempts to give a broad understanding of the origins of the modern public school system in order to illuminate the challenge of education reform. At the turn of the twentieth century, the Progressive movement attempted to use schools in order to respond to the dramatic societal changes. In particular, the pedagogical Progressives' attempt to change the instructional model highlights the complexities of the public education system, as well as its general resistance to reform. Accordingly, this section offers a framework for understanding attempts to fundamentally alter classroom practices, and illuminates how reforms are transformed when they interact with the many layers of the education system.

❖ *American Education at the Turn of the Twentieth Century*

The convergence of industrialization and urbanization in the nineteenth century brought about fundamental changes to American society that came to be reflected in the public school system. The common school had historically belonged to the community, and was one of the few social institutions that rural people encountered daily. However, as these major changes took hold, critics began to question if the rural school was suited for the more complex society that was forming. Notably, in the 1890's the National Education Association's (NEA) Committee of Twelve on Rural Schools sought to systemize the schools. The Committee articulated the goal of a standardized, modernized "community" in which leadership came from professionals. Consequently, laymen lost much of their direct control over the schools and a new bureaucratic model of decision-making took hold – one that largely

mirrored the hierarchy and specialization of the factory model. The trend of centralization continued over the course of the twentieth century, as the number of one-room schools declined from approximately 200,000 in 1910 to 20,000 by 1960 (Tyack 1974, 15-25).

Two crucial factors defined school reform at the turn of the twentieth century: the influx of the immigrant poor and compulsory school attendance. Between 1890 and 1907 nearly eighteen million immigrants came to America (the population was approximately seventy-five million at the time). In 1910, three-fourths of the population of urban centers (such as New York and Boston) were either first- or second-generation immigrants (Berube 1994, 3). Meanwhile, by 1900 thirty-one states had passed compulsory education laws, typically requiring attendance of children from ages eight to fourteen. Accordingly, enrollments surged, as did the costs of schooling. From 1890 to 1918 there was a 711% increase in the attendance of high schools, while the total population only increased by sixty-eight percent (Tyack 1974, 183-4).² Thus, the nature of education was itself changing. Compulsory school attendance marked a new era in the history of American education. “Thousands of recalcitrants and incorrigibles who in former times might have dropped out of school now became public charges for a minimum period” (Cremin 1961, 127). Thus, the Progressives recognized the opportunity that these problems presented: “If the masses were to be educated, the schools would need to be reimagined in order to fit the new economic and social conditions of an urban-industrial society” (Cremin 1961, 128).

❖ *The Progressive Education Movement – Origins and Goals*

² Similarly, secondary school enrollment rose from 61.6% of fourteen to seventeen year olds in 1920, and 79.4% by 1940.

The Progressive education movement was the first cohesive reform effort that aimed to fundamentally alter patterns of schooling. Progressive education began as part of a broader program of social and political reform called the Progressive movement. At the heart of Progressivism were efforts to expand democracy, sympathy for the immigrant poor, attempts to counterbalance the rise of unbridled wealth with the new industrialism, and a drive against municipal corruption. Thus, broadly speaking, Progressive education was an “attempt by educational reformers, psychologists, and philosophers to develop a school experience that would benefit the whole child's intellectual, social, artistic, and moral development” (Berube 1994, 1-14). Although Progressive educators were united in their desire to change the traditional school, the movement was marked by tremendous diversity, as “through its history Progressive education meant different things to different people” (Cremin 1961, x).

According to the leading historian of the movement, Lawrence Cremin (1961), Progressive education began simply as Progressivism in education: “a many sided effort to use the schools to improve the lives of the individuals” (p. x). The Progressives therefore attempted to broaden school functions, use new scientific research to inform pedagogy, and tailor instruction to meet the needs of different children entering schools (p. vii-x). Meanwhile, education historian Diane Ravitch (2000) explains that the Progressive education movement encompassed four significant ideas: first, that education might become a science; second, that education could match the innate needs of a child; third, that education could fit children into their roles in society; and fourth, that schools could enact changes to the social order

(p. 60). Finally, historian Arthur Zilversmit (1993) maintains that despite the variety of ideas, there was indeed some agreement concerning what defined Progressive schools: Progressives followed a “child-centered rather than a subject-centered curriculum,” the school was meant to promote the emotional and physical needs of children (in addition to their intellectual development), and children should be given an active role in determining the content of their education (p. 18). The present discussion focuses on a particular wing of the Progressive education movement – known as the ‘pedagogical Progressives’ – that aimed to transform the traditional methods of teaching and learning.

➤ *The Emergence of Progressive Education*

The emergence of the Progressive education movement began in 1892, when Dr. Joseph Mayer Rice wrote a series of articles on the state of American schools.³ Rice, a pediatrician with an interest in education, spent two years traveling the country on behalf of *The Forum* in order to prepare a firsthand appraisal of American education that was intended as an objective assessment for the public. His tour took him to thirty-six cities, including many of the burgeoning urban school systems, where he talked to approximately 1200 teachers. His conclusion: American education was a disaster. Citing the fact that teaching was “unscientific,” and geared to the “mechanical” methods of rote memorization and recitation, he proposed a new education that aimed “to lead the child to observe, to reason, and to acquire manual

³ The emergence of the movement is a similarly debated historical subject, so for the purposes of this analysis I accept Lawrence Cremin’s theory: “because Rice freely used the term *Progressive* with respect to teachers, schools, and educational programs, because he clearly sensed that an educational *movement* was in the making, and because he shared many of the political and social ideas of the broader Progressive Movement” (Cremin 1961, 358-9).

dexterity as well as to memorize facts—in a word, to develop the child naturally in all of his faculties, intellectual, moral, and physical” (Rice 1969, 21). During his visits, Rice observed teachers, schools and educational programs that he felt possessed a “truly Progressive spirit” of learning, with the most notable being Francis Parker’s public school system in Quincy, MA. Accordingly, Rice put his faith in Progressive reform, terming it the “great educational revolution” that would point American education “in the right direction” (Rice 1969, 230). Rice’s articles elicited a major response from the public that sparked a critical analysis of the nation’s schools.

➤ *John Dewey and the Pedagogical Progressives*

Although Rice introduced the nation to the movement, it was John Dewey who articulated a theory of Progressive education. There were three dimensions to Dewey: first, he was a philosopher; second, he was an educator; and third, he was a social activist (Berube 1994, 31). Dewey defined education as “that reconstruction or reorganization of experience which adds to the meaning of experience, and which increases ability to direct the course of subsequent experience” (Dewey 1916, 101-102). The central notion is thus one of *growth*, as Dewey wanted schools “to inculcate habits that would enable individuals to control their surroundings rather than merely adapt to them.” His belief in Progressivism rested on the hope that education could realize its potential as a constructive agency that would not only develop children and youth, but also the future of society, as the ideal of democratic community permeated through Dewey’s educational thought (Zilversmit 1994, 6). Accordingly, for Dewey the primary purpose of the Progressive education movement was to make schools an instrument of social reform. Although Dewey formulated the aim of education in

social terms, he believed its success would come in the form of “changed behaviors, perceptions, and insights of individual human beings.” (Cremin 1961, 122-123).

Given the radical change that industrialization had wrought, Dewey declared, “only an equally radical change in education suffices” to meet the demands and conditions of this new society/century (Dewey 1900, 10).

Dewey and the pedagogical Progressives used Rousseau’s understanding of childhood as a time of physical, intellectual and moral development. From these core beliefs, Dewey developed his ‘new education,’ the essence of which involved shifting the educational center of gravity to the child. Schooling was therefore meant to be a “progress of natural growth,” which recognized that not all children learn at the same rate, or in the same way (J. Dewey & E. Dewey 1915, 17). Hence, Dewey’s attack on “the old school” centered on the passivity of teaching methods and the uniformity of the curriculum. He thought that the learning process should be real to the student by actively engaging the “child’s native curiosity,” and accordingly felt that children should understand what they learned as it applied to “present life” (Cremin 1961, 123). The school was therefore meant to concentrate on problems and processes rather than academic subjects, as the child’s intellectual abilities were best developed through problem solving. (Dewey felt that beyond the formal curriculum, active cooperation amongst children could teach essential skills and knowledge.) In order to achieve these goals, Dewey depended upon the application of the social sciences to education (Ravitch 2000, 57). He saw science as a method to solving human problems, and believed that “scientific knowledge of man gained through the social sciences ... [could] play an enormous role in intelligently determining our decisions,

choices and actions” (Zilversmit 1993, 8). For Dewey, the power of science was in its ability to clarify options and allow for informed decisions about conditions favorable to learning.

❖ *Progressive Education: From Theory to Practice*

Over the course of the movement, Dewey’s ideas came to be interpreted in a variety of ways, many of which distorted his original vision. Accordingly, this section intends to highlight two core ideas of Progressive education – namely, meeting the needs of every child and utilizing science to improve education – in order to understand how the goals differed from the end results. The initiatives that were born out of the Progressive ideals demonstrate two things: first, as reform movements gain momentum, they also gain new constituencies that often seek to use the movement for their own ends; and second, the school system inevitably changes attempted innovations, particularly efforts intended to alter the core of education.

➤ *Child-Centered Schooling – Exemplary Models*

The most influential model for child-centered schooling was John Dewey’s Laboratory School. Founded in 1896 by Dewey and his wife, its purpose was to discover “how a school could become a cooperative community while developing in individuals their own capacities and satisfying their own needs” (Mayhew & Edwards 1936, xv-xvi). The Laboratory School exemplified the aims of the Progressive education movement by utilizing projects and activities in order to create exciting learning experiences that appealed to children’s interests and unleashed their intellectual energies (Ravitch 2000, 171). At the Laboratory School, students were encouraged to direct their own work and to become involved in social activities “in

which they could explore, create, and find out for themselves” (p. 172). Teachers were meant to create an atmosphere similar to a home, in which the adults “lovingly guided children to develop their social, physical, and intellectual capacities” (p. 173). However, Dewey did not intend to throw out the traditional curriculum, but rather sought to find innovative approaches to teaching significant ideas. In 1902, he insisted that there was no conflict between the child’s experiences and subject matter, as he viewed the relationship on a continuum rather than in opposition (p. 172). Unfortunately, the majority of Dewey’s disciples in the Progressive education movement treated subject matter as outdated, and focused all their attention on the children’s experiences without regard for how it fit into the cumulative experience of society.

The Lincoln School at Teachers College, established in 1917, similarly showcased Progressive methods, and had a far-reaching impact on American education. The Lincoln School was intended to be an experimental institution for new methods and materials, summed up by the motto: “Try anything once and see if it works” (Cremin 1961, 282). The goal was to build a curriculum around “units of work” that taught traditional material in ways that took into account the development of children and the changing needs of adult life:

Each of the units was broadly enough conceived so that different children could concentrate on different aspects depending on their own interests and the teacher’s sense of their pedagogical needs; each of the units called for widely diverse student activities; and each of the units sought to deal in depth with some crucial aspect of contemporary civilization.

(Cremin 1961, 283)

Despite all the experimentation, Lincoln never abandoned its commitment to the traditional curriculum. One of the key achievements of the Lincoln School was that it

was apparently able to serve its own pedagogical ends without sacrificing the academic achievement of its students. However, the breadth of its impact on the Progressive movement was largely attributed to Teachers College, where Lincoln's staff taught more than two hundred different courses in the 1920s. According to Cremin (1961), "no single Progressive school exerted greater or more lasting influence on the subsequent history of American education" than the Lincoln School (p. 285). Lincoln's staff gave talks and circulated books, causing public schools to absorb the forms and processes developed at the school. Teachers and principals subsequently created activities and projects for distribution, as the Lincoln influence could be seen "wherever small children worked informally in small groups on projects or used a reading center or science center, instead of sitting quietly at individual desks" (Ravitch 2000, 186-187).

➤ *Child-Centered Schooling in the Public Education System*

Although the work at the Laboratory and Lincoln Schools was notable and influential, their Progressive methods did not ultimately reach the masses because they could not translate to the public school system. Both schools had a commitment to innovation, remarkable staffs and students that came from well-to-do families. These conditions could not be replicated in the majority of the nation's schools. Moreover, as Ravitch (2000) explains, "the experimental nature of the Dewey school, as well as its environment of constant reflection and adjustment, guaranteed that it could not be translated into a "program" for a large bureaucratic structure" (p. 183). Thus, public schools came to absorb the forms and processes developed at these schools, but lost sight of the driving theory and the intellectual rigor. As a result, the

Child-Centered Movement that took hold in the 1920's hardly resembled these model schools.

The core of the movement was a rebellion against the traditional curriculum, as the new child-centered schools and programs were based on “freedom, not restraint...the active, not the passive” (Ravitch 2000, 194). Advocates believed that they were following the latest Freudian theories that could tap into the “apparently unlimited desire of and interest of the children to know and be” (Berube 1994, 14). They presented a dichotomy of freedom and blissful activity versus a regime of order and control, where freedom was defined as complete “absence of restraint.” These schools prized spontaneity over a planned curriculum, and felt that whatever was taught was supposed to spring from children's interests and to promote experience and doing (Ravitch 2000, 194). The result was that programs consisted of units and activities derived from children's interests, instead of subject matter.

The glaring weakness of the Progressive movement—particularly in the 1920s—was that it had no program, no direction and no guiding philosophy to replace traditional education. Even Dewey himself came out as a critic against the champions of “free expression for the child.” He noted that Progressive schools were often hostile to planning, organization, and subject matter, and explained that “learning by doing” required “definite and organized bodies of knowledge,” not activity alone (Ravitch 2000, 200). Ultimately, only a handful of Progressive schools developed that actually promoted deep understanding of subject matter through carefully planned projects with the supervision of well-educated teachers. Meanwhile, spontaneity and a lack of organization characterized the majority of Progressive schools.

❖ *The Legacy of the Progressive Education Movement*

The Progressive education movement began with the primary purpose of making schools the fundamental instrument of social reform and progress. The movement's philosophical basis rested in Dewey's belief that school's ultimate task was to prepare children for life in a changing world. Progressives thus shared Horace Mann's vision of a "messianic role for education, the belief that the common school could provide the alternative to social turmoil and could mitigate the effects of economic inequality" (Zilversmit 1993, 17). Dewey, the movement's leading spokesman for pedagogical change, articulated the central ideas of a "new education" that focused on individual growth of the "whole child," and the use of scientific methods to optimize learning environments. Yet, it was the attack on the traditional school, and with it the academic curriculum, which proved to be the common bond of the Progressive educational reformers. While the best Progressive practices did take hold in certain elite and innovative private schools, they did not translate to the public school system. Over the course of the movement, meeting the needs of the whole child came to mean differentiated curricula for different groups of students, while the use of science focused on making schools socially efficient rather than centers of learning.

➤ *Curricular Differentiation*

Progressive reformers inspired by Dewey to create a "new education" came to interpret his ideas very differently in private Progressive schools and public school systems. For students from middle and upper class families in elite, private institutions (such as the Lincoln School), the "new education" proved to be an

innovative approach to learning that incorporated children's interests and activities into the curriculum. Progressive education methods were aimed at the development of the extremely able child, as "self-expression, creativity, and child-centered activities represent a stage of intellectual development that is best taken advantage of by students who have no concern about cramped sleeping quarters or hunger" (Berube 1994, 23). For the majority of students in large (urban) public school systems this "new education" meant vocational and industrial education to train the children of the masses for their future work. The public school became a "center of assimilation," in order to Americanize the immigrants (Ravitch 2000, 185). Accordingly, one of the major legacies of the Progressive reform movement was curricular differentiation.

Educational psychologist Edward Thorndike was instrumental in promoting scientific thought within the Progressive movement. Thorndike and his fellow psychologists believed that their profession would play a pivotal role in shaping society along rational lines. In the same manner that science had brought about technological advancements, Thorndike believed that "man's own powers of intellect, character and skill are no less amenable to understanding, control, and direction" (Ravitch 2000, 131). In one of his experiments Thorndike demonstrated that skills developed in one specific class were not transferable to other subjects, which undermined one of the major arguments for teaching traditional school subjects. More important, Thorndike, like many of his colleagues, regarded intelligence as essentially fixed, and helped devise standard tests that supposedly measured a student's innate capacity to learn. The use of group intelligence tests in WWI led psychologists to introduce similar testing in schools for assigning children to different academic

programs. Curriculum differentiation and homogenous grouping came to be considered a fundamental principle of modern, Progressive education since mental testing was a scientific methodology to identify individual differences. Endorsed by the majority of educational psychologists, group intelligence testing became a routine feature of American public schools in the 1920s, as it was used to classify pupils in sixty-four percent of elementary schools across the nation by 1925. Thus, Progressive educators broadly recognized mental testing as the forefront of the scientific movement in education.

As more students enrolled in schools, the problem of “laggards” (students far behind others of the same age) became a more pressing matter. Progressive reformers determined that the source of this issue was the academic curriculum, arguing that only the small number of students going to college needed a liberal education, while the majority of children should be sorted into programs to prepare them for their likely future in the workforce or in the home (Ravitch 2000, 89). Thus, while Dewey wanted the school to recognize that students had different interests that were not exclusively academic, the Progressives interpreted his theory in order to largely expel the traditional curriculum from the majority of students’ educational experiences. Group intelligence testing, broadly recognized as part of the Progressive educators’ scientific movement in education, provided the powerful selection instrument to determine the innate capacities of students and decide which curricular track they should be placed (Ravitch 2000, 156). In the 1930s, the Progressive Education Association’s drive for child-centered education led to a campaign to convince school officials that the academic curriculum conflicted with “the needs of youth” (Ravitch

2000, 273). PEA reports wanted curricular reorganizations to substitute contemporary social issues and other useful information for organized academic subject matter.

Consequently, rather than focusing on social welfare as Dewey advocated, schools ended up promoting the status quo by denying opportunity, and with it any chance of social mobility to the students who stood to benefit the most.

❖ *The Administrative Progressives: Centralizing Control*

The Progressive education movement was characterized by primarily by its diversity. In particular, as the movement developed, different groups involved themselves to serve their own purposes. For instance, “bankers, businessmen, industrialists, philanthropists, social workers, educators,” joined the push for industrial education in the early part of the twentieth century. At the turn of the century, a movement composed mostly of business and professional elites planned a shift in the control of urban education to put political power in a small committee of “successful men.” David Tyack (1974) termed this group the “administrative Progressives,” operating under the broad category of the Progressive movement, but far removed from the pedagogical Progressives (such as Dewey). Their goal was to fundamentally change the structure and process of decision-making in the name of rational efficiency. Accordingly, they sought to “delegate almost total administrative power to an expert superintendent and his staff so that they could reshape the schools to fit the new economic and social conditions of an urban-industrial society” (pp. 127-129). Yet, their underlying thinking was driven by the belief that schools should be adapted to social stratification, as their perspective reflected a “modern” deference to the expert that took a paternalistic tone.

Indeed, the administrative Progressives proved to be quite successful in centralizing the organizational control of urban education. Between 1893 and 1923 the number of central board members had dropped from an average of 21.5 per city, to just seven. Moreover, case studies indicate that after centralization school boards were overwhelmingly composed of business and professional men. They instituted a decision making structure modeled after the corporate board of directions with an expert manager at the helm. Despite campaigning for a “non-political” and rational reorganization, public school managers often catered to the wishes of their “major stockholders” – the business leaders (Tyack 1974, 126-127). As Tyack (1974) explains, “during this period there was a blurring of lines between “public” and “private” in businessmen’s quest for a stable, predictable, rational social organization” (p. 40). The result was a new bureaucratic model in which power emanated from the top-down.

The administrative Progressives illuminate that the label of “Progressivism” in education was “loosely applied to a variety of reformers, philosophies and practices.” This group had next to nothing in common with either the pedagogical Progressives, or the small group that aimed to use schools to construct a new social order. Tyack concludes that the administrative Progressives “constituted a political-educational movement with an elitist philosophy and constituency” (pp. 196-198). Their focus on social efficiency meant that they primarily concerned with “organizational behavior and the linkage of school and external control...rather than individual development of students.” The administrative Progressives ultimately brought more red tape and administration to urban school systems, and actually worked counter to Dewey’s ideal

of changing the hierarchical structure of schools.⁴ More importantly, the structures that they implement largely remain in place today, and have been a major hindrance to education reform efforts over the last century.

❖ *Progressive Practices in the Classroom*

Within schools, the pedagogical Progressives attempted to fundamentally change the way that students experienced learning. A careful analysis by historian Larry Cuban suggests that the movement was only moderately successful to the extent that Progressive practices expanded teaching methods. In his book *How Teachers Taught*, Cuban (1993) concludes that a core of Progressive teaching practices – “increased levels of student participation through small-group work; project activities; more student expression; increased use of varied classroom groupings; integration of two or more subject areas; more contacts with the community through field trips; and more freedom for students to move around the classroom” – appeared in approximately a quarter of the classrooms in districts that made a concentrated effort to install these reforms (p. 142). However, these new approaches were unable to replace existing practices, and instead were combined with standard teaching methods in order to form hybrid patterns of instruction. Cuban suggests that teachers were faced with a fundamental dilemma of incorporating Progressive pedagogy while still meeting the societal expectations and daily realities:

Every teacher had to resolve individually this dilemma of wanting to embrace the values of Progressive pedagogy (individual choice, self-expression, and independent thinking) while satisfying the social and organizational demands

⁴ Indeed, Zilversmit points out that the administrative Progressives’ efforts led to a school system subject to objective and even rigid patterns of rules and regulations, and this “increased bureaucracy undoubtedly played a role in blunting the spontaneity that lay at the heart of Progressive education” (Zilversmit 1993, 171).

for children to obey authority, behave uniformly, and acquire a common body of knowledge.

(p. 113)

The need for teachers to independently figure out what practices best suited the students in their classroom settings points to a larger issue of education reform: the power of the teacher. Despite the top-down nature of control in the public school system, when the door closes, it is the teacher that ultimately decides what changes actually take hold. As Cuban points out, when alternative pedagogies are introduced into the discussion, classrooms become the arenas where these (often conflicting) values need to be resolved.

In the case of the Progressive movement, new teaching practices joined existing ones, but remained limited in use. Summing up the effect of Progressive pedagogy, Cuban explains: “By 1940, alternatives to standard teaching methods were available, widely known, used by a minority of teachers, and considered respectable by professional norms” (p. 145). Compared with the classrooms at the Laboratory and Lincoln schools, these practices seemed far removed from the Progressive desire to alter patterns of learning. Nevertheless, “substantial numbers of teachers did, indeed, modify their classroom repertoires” to incorporate some of these new techniques (p. 144).⁵ Meanwhile, the majority of teachers chose to reject these new practices, largely because of the investment of time and energy that these innovations required.

Teachers frequently viewed such methods as disruptive to their existing routines,

⁵ Cuban notes that these practices were most prevalent where “top administrators formally approved the effort, established organizational machinery to carry it out, and persisted in its implementation.” Otherwise, Progressive practice appeared in unique schools from the “persistence and dedication of tireless individuals.” (Cuban 1993, 144).

removed from their daily realities, or lacking an explicit incentive. Moreover, there was no evidence suggesting these changes would ultimately benefit the children. Hence, the impact of Progressive pedagogy has two major implications concerning the problem of change in American public education: first, teachers wield a great deal of power when it comes to reform adoption; and second, the core educational practices prevalent in schools are a historical product, as changes tend to merge with whatever precedes them.

❖ *The “Grammar” of Schooling*

In their essay, *The “Grammar” of Schooling: Why Has it Been so Hard to Change?*, David Tyack and William Tobin (1994) discuss the stability of the organizational framework of schools, and how this larger system serves to influence what goes on in the classroom. They explain that the “grammar” of schooling – the “regular structures and rules that organize the work of instruction” – is a historical product that has gained implicit cultural acceptance concerning what schools *should* look like (p. 479). Indeed, the stability of the system has produced expectations that cause any departures from customary practice to face resistance from those both inside and outside the educational establishment. Moreover, the authors point to the inherently political nature of the system, as they explain that these organizational patterns are “the historical product of particular groups with particular interests and values at particular times—hence *political* in origin.” In their article, Tyack and Tobin illustrate how certain practices became institutionalized, while challenges have been largely resisted. One such challenge – the PEA’s Eight-Year Study – serves to highlight a few of the key obstacles that must be overcome when attempting to

change any aspect of the interdependent educational system. Accordingly, this section serves to link Progressive efforts to change the core of schooling with the some of the broader problems that plague attempted innovations.

➤ *The Eight-Year Study*

As Progressive educators aimed to experiment with the curriculum and blend subjects in order to adapt schooling to individual needs, they ran into a major obstacle in the college-entrance requirements. Progressives felt that this arrangement perpetuated “institutional patterns dictated by colleges” that reflected an antiquated system, which did not work in the service of learning (Tyack & Tobin 1994, 467). In hopes of challenging the “grammar” of schooling, the PEA launched the Eight-Year Study (1933-1941). For the project, twenty-nine schools were chosen as “institutions of highest character and excellence and established reputation,” while over two hundred colleges were persuaded to admit highly qualified students on the recommendation of the principals of these schools. Freed from college requirements, innovators tried out a handful of experimental practices and programs that were more individualized and student centered:

teachers developed core programs that crossed departmental boundaries and varied the time periods and sizes of their classes; students spent less time on the main line academic subjects and more on art, music, and drama; and the distinction between the formal and informal curriculum began to dissolve as students participated in community service, artistic productions, publications, and decision making in school affair.

(Tyack & Tobin 1994, 468)

Evaluators found that the graduates of these experimental schools performed at least as well – and often better – in their courses when compared with graduates of more traditional schools, while they were also found to be “more active in collegiate social,

artistic, and political life.” The Director of the PEA at the time of Study therefore concluded that there “is no single course of preparation for success in college,” and hoped that other schools would follow suit and alter traditional features of schooling (Tyack & Tobin 1994, 470).

However, when evaluators returned to these schools in 1950, they found that these new organizational patterns had not endured. Nearly all of the participating schools had returned to their old methods, as there was little evidence of the new practices that had flourished during the time of the Study. This return to fundamentals demonstrates a key fact about reforms: just because a new practice is ‘successful’ does not guarantee that it will last. Although these methods proved to be effective for the students they served, influences both outside and inside school perpetuated (traditional) institutionalized practices. In the case of the Eight Year Study, externally WWII and the Cold War produced a shift in societal attitudes concerning the need for order. Meanwhile, within the schools committed teachers were “exhausted by the demands made on them,” and faced further instability from staff turnover. Tyack and Tobin (1994) concluded that the experiences of the schools in the Study show:

substantial changes in the grammar of secondary schools were possible under highly favorable conditions...But when conditions changed...most of the schools reverted to the traditional grammar of instruction understood by most parents and teachers as standard features of a “real school.”

(p. 471)

It is important to note that the participating schools were selected because they were well financed and had staffs that were open to experimentation (and served prosperous student bodies). These schools also had assets unavailable to most reformers: access to foundation grants, curriculum consultants, summer workshops

for planning, as well as the favorable publicity of the project. Thus, while this particular environment was able to produce promising changes to traditional education patterns, these conditions do not reflect the realities of the majority of schools.

The return to traditional practices also highlights that educators – like many other professionals – can get exhausted from innovation, and prefer settling into routines. People working in the education system – particularly teachers – learn how to work within “traditional organizational patterns” that have endured for generations. In particular, teachers use habit as a “labor-saving device” in order to efficiently deal with the taxing demands placed on them. As Tyack and Tobin explain:

Changing the basic organizational patterns created considerable cognitive and emotional strain for teachers, for it did not simply add new tasks to familiar routines but also required teachers to replace old behavior with new and to persuade pupils, colleagues, parents, and school boards to accept the new patterns as normal and desirable.

(p. 468)

Teachers know that their existing practices work (to some extent), and innovations almost never come with the evidence to promise that they will be superior alternatives. Hence, in addition to the investment of time and energy required of teachers to adopt reforms, the uncertainty that accompanies fundamental change adds yet another major obstacle to the process.

Finally, Tyack and Tobin point to the importance of political influence in education, as well as how the historic practices of education are maintained through the strong hold that community and societal expectations have on schools. Arthur Zilversmit (1993) highlights how the problem of democratic control hinders reform efforts:

Educational reform of any type is easily frustrated by the fact that the people who ultimately must vote for school board members and funding need to be convinced that the traditional patterns they are familiar with need to be altered, that what was “good enough for me” is no longer adequate.

(pp. 169-170)

Thus, Zilversmit illuminates a complex issue: the political nature of the public education system means that policy-makers and bureaucrats are accountable to community members that have distinct conceptions of what they want from their schools. Zilversmit goes on to explain that many reforms are limited by the lack of public support. Indeed, one perspective on the persistence of educational institutions argues that organizational structures conform to general public beliefs. People believe they know what a “real school” should look like. Tyack and Tobin (1994) suggest that this “*cultural construction* of what constitutes a ‘real school’” is a major obstacle for change, as public expectations inform and alter the implementation of reforms. John Dewey largely echoed this notion in his discussion of the failure of the Progressive movement to bring about genuine change. He cited the difficulty of changing people’s “long-established habits.” Moreover, he pointed to the important role of institutions – “social habits organized in the structure of common life” – as mechanisms for assimilation and conformity rather than as vehicles for change. Accordingly, schools come to reflect community values given that they are governed by locally elected boards of education and paid for by local taxpayers. Therefore, the endurance of the grammar of schooling has not only reinforced the organizational patterns of the education system, but also the cultural belief structures surrounding schools.

❖ *Bureaucracies and the Problem of Political Incentives*

Although school bureaucracies were supposed to have been designed to take politics out of schooling, in reality these institutions remain highly politicized, and this has drastically impacted the incentive structure for reform. The dominant actor in local school systems is the superintendent, who serves as a full-time, professional expert that determines the school board's agenda and speaks for the entire administration. Despite the nonpartisan election process, the superintendent is ultimately a political figure with a "virtual monopoly on educational expertise and other detailed information" (Hess 1999, 181). Accordingly, school reform can be largely understood as a political response to political pressures (Hess 1999, 126). One critical problem for education reform is that there are strong institutional incentives for policymakers to propose change, rather than to actually improve teaching or learning. Given the costs (i.e. risks) associated with true reform, it is politically advantageous to use reform as a tactic rather than as a means for improvement.

The incentive structure of urban superintendents is greatly influenced by their short tenure, as well as the expectations placed on them by the school board and the community. The typical tenure for an urban superintendent is three years or less, which means that the focus is on initiating reforms, particularly ones that show rapid results (Hess 1999, 14). In order for policymakers to act, they need community resources and support. District policymakers are much more successful if they "enjoy business support, parental cooperation, the active participation of community organizations, and the backing of municipal officials" (Hess 1999, 17). Therefore, the school leader seeks to gain approval by attaining the reputation of being a promising innovator. However, community members are impatient when it comes to long-term

solutions because parents want to see that the school improve immediately for their children, rather than five or ten years down the line. Accordingly, communities tend to rally behind the superintendent who promises quick fixes, and they get impatient if they do not see results, typically in the form of improved test scores.

Initiating reform helps superintendents to garner support since it is an “ideal input measure because it is a visible promise of improvement” (Hess 1999, 40). However, solving problems turns out to be less important than the *appearance* of tackling them. As Hess explains, “Most reform is not a serious attempt to change teaching and learning the classroom but is intended to bolster the stature of the district policymakers” (Hess 199, 177). Fundamental change necessarily involves uncertainties about how these reforms will play out in the school and the community, not to mention that such efforts are time-consuming, difficult to implement, and tend to be “unglamorous.” Thus, incentives deter policymakers from proposing reforms that are aimed at significantly altering teaching or learning. Instead, superintendents opt for reforms that generate the “most positive political feedback” in response to their time constraints and desire for public prestige (Hess 1999, 103, 122). Accordingly, superintendents aim to move quickly and show rapid results, while board members and administrators support this “churning cycle of largely symbolic activity” (Hess 1999, 59, 77).

❖ *The Disconnect Between Policy-makers and Practitioners*

The nature of these political structures highlights a further issue: the fundamental disconnect between policymakers and school-level practitioners. Ignoring the incentive problem facing policymakers, administrators lack firsthand

knowledge of the daily work conditions for teachers. While all policymakers have been students, few have actually been teachers, and they are therefore out of touch with what goes on in a classroom setting.

Teachers focus on what is particular within their own classrooms; reformers focus on what is universal across many classrooms. Teachers operate in a setting dominated by personal relations; reformers operate in a setting dominated by abstract political and social aims. Teachers draw on clinical experience; reformers draw on social scientific theory. Teachers embrace the ambiguity of classroom process and practice; reformers pursue the clarity of tables and graphs. Teachers put a premium on uniformity of practice and outcomes.

(Larabee 2010, 158)

Accordingly, policymakers have a “serious credibility problem” when it comes to their reform agenda because they are unable to understand the everyday lives of teachers (Cuban 2013, 164-165). Moreover, these outsiders “rarely factored into their plans a sophisticated understanding of the school as an institution or insight into the culture of teachers. They tended to treat ‘schools as though they were made of silly putty’” (Cuban & Tyack 1995, 112-114). Hence, improvements that might work in other contexts frequently fail when they are implemented in the school environment.

As a result of the poor understanding of the daily realities of schools, reforms are typically adapted to local circumstances. The majority of reforms proposed by elite policymakers could never actually work as planned in schools, so the administrative agencies charged with implementing these policies “adapt innovations to local circumstance, or comply in minimal ways, or sabotage unwanted reforms” (Cuban & Tyack 1995, 61). In particular, teachers come to act as “street-level bureaucrats,” with the discretion to make decisions about policies when the classroom door closes. Teachers adopt reforms as they see fit by blending new practices with

their old routines. Faced with the constant flow of reform mandates, teachers tend to have the “wisdom to reject fashionable innovations that violate their sense of what their pupils need and instead [choose] to experiment on their own terms with reforms they believe in.” Thus, when educators deem reform demands inappropriate, they are “skilled in finding ways to temper or evade their effects,” and adapting these changes to their daily realities (Cuban & Tyack 1995, 132-135).

❖ *Conclusion*

The pedagogical Progressives’ attempt to implement a child-centered curriculum highlights the challenges inherent to American education reform. First of all, educational theory is not easily translated into practice. Even in private institutions, Dewey’s ideas proved hard to implement. Second, despite the top-down system of control, the public education system is not run through typical hierarchical arrangements. The organizational patterns are full of interdependent levels that do not communicate with one another. Indeed, Cuban (2013) suggests: “This multilayered view of a complex system aimed at human improvement suggests the intricacies of overlapping and interacting levels comprising K-12 schooling. At each level, change and continuity are in dynamic, even tense, equilibrium—almost like running as fast as possible just to stay in place” (p. 159). Thus, it is incredibly difficult for outsiders to gain an understanding of how to enact change within the system. Third, the forces of dynamic conservatism adapt reforms to suit institutional stability. At the bureaucratic level, changes are implemented as they fit the organizational mission. Meanwhile, at the classroom level, teachers frequently resist new ideas and programs by only making small changes and being minimally compliant. Consequently, “incremental

changes occur frequently, without fundamentally altering school funding, governance, organization, curriculum, and instruction” (Cuban 2013, 3).

III. Blended Learning

❖ Introduction

At a basic level, BL optimizes aspects of face-to-face and online instruction in order to enable personalized and differentiated learning pathways for individual students. For K-12 schooling BL constitutes a fundamental change in the instructional model, aimed at moving away from the one-size-fits-all approach that largely characterizes the current system, towards personalized learning environments for individual students. Thus, the BL movement rejects the expectation that students should progress at the same pace through the same curriculum, and seeks to replace the so-called “factory model” of education with an environment that better meets the needs of each learner. However, much like the Progressive movement, proponents of BL are united by their rejection of the traditional approach to education, but presently lack a unified vision of the direction that the movement is headed. Moreover, BL in K-12 education is a relatively new phenomenon, and is therefore in its infancy. New models are constantly being developed, while older ones are being refined and improved upon. Nevertheless, BL can indeed be considered a coherent reform movement in K-12 education given its steady rise and the taxonomy that has developed. Accordingly, my task is not to provide a comprehensive analysis of the current developments, nor a broad overview of everything being done in the field of BL. Rather, this chapter intends to highlight the essential elements of BL by focusing on the theory behind the movement, as well as three school models that fall along the spectrum of modest to more radical attempts to rethink the instructional model.

❖ Defining Blended Learning

Although BL has only emerged recently in K-12 education, it is important to understand that BL environments are not new: they are prevalent in corporate settings and are gaining traction in higher education. (Indeed, there is a great deal of literature about BL design models that lie beyond the scope of this project). The manifestations of BL in K-12 schools vary tremendously in terms of the amount that technology and online instruction are being blended with traditional features of schooling. Given the rise of BL environments, a taxonomy has emerged.

The Clayton Christensen Institute (CCI) – a non-profit, nonpartisan think tank – has developed the most commonly cited definition of BL based on the common components that they found in a wide range of blended programs. Accordingly, CCI has defined BL as:

A formal education program in which a student learns at least in part through online learning, with some element of student control over time, place, path, and/or pace; at least in part in a supervised brick-and-mortar location away from home; and the modalities along each student’s learning path within a course or subject are connected to provide an integrated learning experience.⁶
(Staker & Horn 2012, 4)

One of the most important aspects of the CCI definition is the “element of student control,” which speaks to the shift towards a student-centered model. It also helps to distinguish BL from technology-rich classroom practices (discussed in depth below), where educational technology applications are used in service of the traditional instructional model. Meanwhile, the Lexington Institute – a non-profit public policy think tank – offers another perspective that fills in some of the gaps of the above BL

⁶ It should be noted that this definition is from a student’s perspective, and says nothing about the quality of the program. The strength of this definition is that it is based on information from roughly 100 education experts and 80 organizations that have attempted to understand what BL looks like for K-12 education.

definition. The Lexington Institute (LI) defines *digital differentiated learning* (one of the many terms used to define the BL model) as follows: “Premised on continuous innovation and individualized learning, it seeks to fully customize student learning by designing instructional models that produce data feedback loops” (Kennedy & Soifer 2012, 5). The notion of “continuous innovation” attests to the evolving nature of BL, and highlights the importance of experimentation and improvement. Meanwhile, this definition also emphasizes the crucial role that data plays in customizing learning, as well as in shifting the instructional model. Based on their observations of BL environments, Kennedy and Soifer (2012) go on to explain that digital differentiated learning consists of but is not limited to:

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

(pp. 5-6)

The above definition puts greater emphasis on the features of BL environments, and points to the importance of data, mastery, learning objectives and customization.

Thus, the LI’s interpretation might eliminate some of the more basic blended environments that would satisfy the criteria of the CCI’s understanding of BL.

Nevertheless, both organizations offer valuable insights concerning the core elements that make BL a distinct, student-centered learning model.

❖ *Blended Learning vs. Technology-Rich Instruction*

BL involves two features that clearly distinguish it from technology-rich instruction: part of the learning is delivered online, and students have some element of control of time, place, path, and/or pace. In a traditional classroom the teacher is the only means for content delivery, and students are typically treated in a uniform manner: they are taught the same material, in the same way at the same time as all of their classmates. In contrast, a blended approach means that online software is delivering some of the content that the teacher would have otherwise been responsible for supplying. These programs necessarily give students an element of control because they can progress at their own pace through the units and activities. Moreover, students generate a flood of data from these games, simulations, virtual environments, end-of-unit quizzes, and adaptive assessments, all of which provide instant feedback to students and teachers (Ark 2012, 37). The data is essential to BL's goal of personalization because it can be analyzed in order to identify what knowledge and skills each individual student possesses.

Therefore, the access to computers or technology is a necessary but not a sufficient condition for BL. While the use of educational technology certainly might improve student engagement, and can also free up time for teachers to work in small groups, it nevertheless does not constitute BL because the online component is not delivering any instruction. Horn and Staker (2012) help to clarify the concept of a "technology-rich" environment, which they define as:

A structured education program that shares the features of traditional instruction, but also has digital enhancements such as electronic whiteboards, broad access to Internet devices, document cameras, digital textbooks, Internet tools, and online lesson plans. The Internet, however, does not deliver the content and instruction, or if it does, the student still lacks control of time, place, path, and/or pace.

(p. 6)

Indeed, many teachers have found worthwhile ways to use technology in their classrooms to promote learning, but that should not be confused with BL. Websites with interactive components might bring the real world to the classroom for students, but they lack the data and analytics that adaptive software offers, and do not deliver any core content. More often than not, technology is simply used as a replacement: “books replaced by web pages, paper report cards with student information systems, chalkboards with interactive whiteboards, and filing cabinets with electronic databases” (Bebell & O’Dwyer 2010, 5). The fundamental issue when teachers use technology in service of the traditional classroom model is that they do not realize the transformative potential of these tools.

❖ *Blended Learning in Practice: Three Models*

Given that BL is a recent phenomenon, there remains a general lack of information about it among school-level practitioners. While whitepapers have aimed to categorize BL into a few general models, the fact that BL is still evolving makes it hard to identify blended practices. On the one hand, many schools claim to offer blended instruction when in reality they are utilizing a technology-rich approach. On the other hand, there are schools that are indeed employing BL but do not overtly define it as such. As one BL expert explained it, “we are in the Wild West of models.” (Klein 2013). Moreover, just because a school is utilizing BL does not guarantee that they are doing it well. The goal of this section is to highlight three

schools that are employing a range of *high quality* BL models that fall along a spectrum of a low to high level of departure from the traditional teacher-centered approach.

➤ *Aspire Public Schools*

Founded in 1999, Aspire Public Schools is a national nonprofit organization that currently operates thirty-seven public charter schools serving over 13,500 students in underserved communities across California and Memphis, Tenn. In 2011, Aspire received a \$240,000 grant (from The Eli and Edythe Broad Foundation) to start a BL pilot program at Aspire ERES Academy, in Oakland, CA. Aspire decided to utilize a station-rotation model for their implementation of BL. In this arrangement, students rotate between three different learning stations during the standard ninety-minute class period. First, there is the teacher-led, small group instruction; second, there is the independent and collaborative practice group; and third, there is the personalized, online instruction station. Accordingly, at the Aspire ERES Academy, students spend thirty minutes a day using i-Ready for English Language Arts (ELA), and thirty minutes on Dreambox Learning for Math. According to their profile on the CCI website, the “station rotation model allows teachers to provide more focused and frequent small group reading instruction while keeping the rest of the class engaged in online content that meets their ability level and provides instant feedback” (CCI 2014). Meanwhile, “as students are engaged on the computers, teachers have the flexibility to pull more small groups and tailor their instruction for specific students or groups of students.” In order to staff their classrooms, Aspire ERES Academy employs a BL teaching assistant that is responsible for “supporting teachers and

students with getting on the computers, troubleshooting technology issues, helping students along when they get stuck, and sharing out student achievement data with teachers.”⁷

A key feature of BL is that the programs that the students use generate learning analytics based on the data about their progress. At Aspire, this data is used in a variety of ways. Teachers might use it to create a class growth goal for all students based their performance on the online curricula. In order to motivate students to keep practicing, teachers also set individual goals for students who are struggling with a particular standard. The teacher can also provide extra in small groups for students that need further help with particular material.⁸ One seventh and eighth grade humanities teacher, explains that she uses data on a minute-by-minute and hour-by-hour basis in order to target lessons and follow up with students based on their needs (Sanina 2014). Meanwhile, one fifth grade math teacher utilizes the online math programs to reinforce what students have learned that week, as she is able to program the specific standards into the software (Sanina 2014). Moreover, there is a built in sense of motivation for students, as they get instant gratification when they master the given standard.

In terms of results, the school’s Academic Performance Index (API) score went up 47 points in the first year of implementation, while the staff also identified

⁷ They also have an instructional coach that supports teachers around small group instruction and classroom management.

⁸ The Aspire Blended Learning Handbook also notes that if the data shows something that doesn’t make sense, a BL teaching assistant might sit down next to a student to observe his or her activity on the computer.

other markers of student progress as a result of BL (CCI 2014).⁹ After the first implementation, the Aspire schools expanded their BL model to four other schools. At one of these schools, Aspire Titan, the percentage of K-5 students reading at or near grade level rose from sixty-six to eighty percent in one year (Aspire 2014). Moreover, Aspire Titan has also been featured in the news for an unintended consequence of BL: kids are reading more. On average, the time spent reading increased from thirty to fifty minutes a day, as students are spending these extra twenty minutes “engaged in buddy reading or independent reading of books of their choice.” The principal of Aspire Titan explains how she sees “more offline reading and writing in class,” and that kids are enjoying reading more than they did when the school utilized the typical Drop Everything And Read (DEAR) approach (Hernandez 2014). Based on the success of their BL approach, Aspire announced in February 2014 that they will expand their BL program to all of their elementary schools in Los Angeles, meaning that fourteen of Aspire’s thirty-seven schools will be blended by the end of the 2015-16 school year.

The station-rotation model is a relatively low-level blend, as it still works largely within the confines of the traditional classroom model. Students all spend the same amount of time on each of the modalities, and the class progresses at a fairly uniform pace. There is certainly a degree of personalization for the students in that teachers are able to cater to their needs, but there is only a small degree of student autonomy, reserved for the time spent using the online learning software.

Accordingly, the Aspire BL model would be considered more of an incremental

⁹ The Academic Performance Index is a measurement of academic performance and progress of individual schools in California.

change than a fundamental one. Aspire has developed a hybrid solution that combines the advantages of online learning with the benefits of a traditional classroom.

Although instruction is more efficient and personalized, the teacher still delivers face-to-face instruction in a largely traditional manner. Meanwhile, students still move in age-based cohorts, visit classrooms on a standard schedule, and use direct classroom instruction for the remainder of their classes.

➤ *Rocketship Education*

Rocketship Education is a network of nine public charter schools serving primarily low-income students in the Bay Area and Milwaukee.¹⁰ Founded in 2006, Rocketship utilizes a blended approach in all of their schools, as they view BL as a way to create a “flexible space where teachers leverage tools—tutors, online learning programs and their peers—to engage kids in a truly personalized learning experience” (Rocketship 2014). Like many of the other BL pioneers, Rocketship is committed to innovation when it comes to their blended approach, and accordingly they have developed the ‘flexible classroom’ as a new iteration of their rotational model.

Rocketship’s “flexible” classrooms have anywhere between 90 to 109 students in a single space rotating between five core components. Students have standard large group instruction with peers at their grade level, while they also spend time in small group instruction where teachers and tutors work with peers that are all at a similar point in the unit. For students who are struggling with a certain concept, teachers and tutors schedule targeted small group intervention. Students also have time for both independent work and team learning, where teachers help students to

¹⁰ Rocketship is set to open a school in Nashville in Fall of 2014, and in Washington DC in August 2015.

collaborate and build social skills through projects. Finally, students receive lessons tailored to their skills through adaptive online learning programs, allowing for additional practice for struggling students and the ability for advanced students to move beyond grade level materials.

A recent classroom visit by Education Week to Mateo Sheedy Elementary School profiled the flexible classroom in action (Herold 2014). Ninety-two students, two teachers and one instructional aide share a single room divided into learning stations. On one side of the room a teacher leads twenty-two students (grouped by ability) through an English lesson on identifying figurative language. On the opposite side, a math teacher leads a group of twenty-two advanced students on a lesson about graphing coordinates. An “individualized learning specialist” is tasked with providing instruction to four students in need of extra help in the intervention station, using a scripted curriculum to provide phonics instruction.¹¹ Meanwhile, the specialist is also responsible for monitoring the twenty-five students working on laptops (receiving tailored math instruction), as well as seventeen students working independently.

The flexible classroom goes a step further than the station rotation model in terms of changing classroom practice. Rocketship’s blended approach does away with the traditional classroom environment, as well as the bell schedule. Students transition between learning activities fifteen times a day (or more), working on all of their different subjects in the same classroom.¹² Meanwhile, teachers deliver content on a much more targeted basis. Because children are grouped by ability, teachers can

¹¹ The instructional aide is not a certified teacher, and is paid roughly \$15 per hour.

¹² All the students leave for a 40 minute period of gardening, as well as 40 minutes for lunch/recess.

differentiate their lessons according to the group's needs. Through the strategic use of different learning stations, Rocketship still maintains a relatively low student-teacher ratio for instruction (22:1) despite only utilizing two teachers per classroom.

Nevertheless, the educational software is still primarily supplementing the face-to-face instruction, and although lessons are more focused, they are still in a familiar pattern. From the student perspective, there is still only a moderate degree of control. Students might use different software and receive targeted help, but they still are on a fairly set schedule (albeit a unique one) and do not appear to get a significant amount of choice when it comes to the programs that they use and the ways in which they demonstrate the mastery of the material.

➤ *San Francisco and Silicon Valley Flex Academies (K12 Inc.)*

K12, Inc. is an online learning provider that operates two BL public charter schools in the Bay Area (one in San Francisco, and other in Silicon Valley). Both schools utilize the same general BL model that differs quite drastically from a traditional school.¹³ Students attend school five days a week for a standard day from 8:00am to 3:15pm, but they spend approximately half of the day using K12, Inc.'s online curriculum, and spend the other half working with teachers, peers or independently on activities tailored for the individual student's needs. The physical space in the schools consists of a large room, where students sit at carrel desks with computers, with breakout and collaboration rooms (that resemble traditional classrooms) along the perimeter. Students receive all of their core instruction at these

¹³ This section will focus on Silicon Valley Flex Academy's middle school students, which receive a slightly modified version of the approach for the high school students.

personal learning stations (from the online curriculum provided by K12, Inc.).

Academic coaches – noncertified teachers (typically pursuing careers in education) – circulate around the main room to keep kids on track and help answer any questions that might arise. Meanwhile, the role of the teacher is not to provide direct instruction from the curriculum, but rather to specifically target problem areas for students during “breakout” sessions (i.e. small group lessons).

As Darren Reed, the Vice President of Blended Schools at K12, explains:

“Fundamental to online learning, whether it is full-time or in a blended school setting, is the idea that the learning experience is unique and customized for every student” (Getting Smart 2011). Accordingly, at the Flex Academies students follow an Individualized Learning Plan (ILP) based on a comprehensive assessment of academic strengths, challenges, and personal learning styles. Therefore, the key to the Flex model is the learning analytics that are generated from the students’ online work, which is supplemented by qualitative data from the academic coaches and teachers. Students, teachers, and parents all have access to the ‘data portal,’ which shows the children’s progress, as well as whether or not they have met their learning goals. On Fridays, the teachers gather to discuss the data from the online assessments, adult observations, and overall course averages, among other growth factors. From this meeting, teachers come up with a schedule of breakout sessions for the next week that is geared towards providing targeted instruction for all of the students, and the kids receive this schedule on Monday morning.

The focus in the Flex model is on student autonomy. Each student has weekly learning goals that must be met in order to stay on track to complete courses, but

otherwise the kids are in control of the structure and pace of their learning. Students average around three breakout sessions per day, but it obviously varies based on the amount of support the individual needs. In addition to the breakout sessions, students attend daily advisory meetings geared towards helping them learn skills to “prepare for college and the workplace” (Ash 2012). Outside of these sessions, students are allowed to choose when and how they reach their personal goals: they can work at the pace that suits them, and they have the freedom to spend an entire day on one subject if that is how they prefer to learn. Moreover, students also can get help whenever they need it. The structure is arranged so that if the learner cannot solve the problem independently, he or she can ask a classmate or an academic coach. If that is not working then there are office hours, and finally the breakout sessions. For middle school students, the curriculum is mastery-based, so students must score an eighty percent or higher to move on to the next objective, and are required to master at least ninety percent of the curriculum by the end of the year.¹⁴

Meanwhile, teachers at the Flex Academies get to focus on the specific needs of individual students, as well as on high-value learning activities and relationships. Mark Kushner, the CEO of Flex Public Schools, explains that their model treats teachers much more professionally, as they are given the freedom to group and teach students however they want (Kushner 2013). Teachers utilize the data to address exactly what each individual learner is struggling with, rather than teaching a lesson that caters to the diverse needs of a class of twenty or thirty students with a range of

¹⁴ Since the curriculum is designed for approximately ninety hours of the course of ninety days, students have the unusual incentive of finishing their work during the school day so that they do not need to do homework – one of the many advantages of self-pacing.

abilities and learning styles. (Since breakout sessions are never more than fifteen students at a time, teachers are always working in small groups and therefore avoid traditional problems such as classroom management). With the core curriculum being taught through K12, Inc.'s software, teachers are also able to design activities and projects that aim at higher-order thinking skills and deeper learning.

The BL model that the Flex Public Schools utilize speaks to a fundamental redesign of traditional schooling. Students are given a great degree of autonomy with regard to time, path, pace and place of their learning. Moreover, teachers do not deliver lectures at all, as they utilize the analytics from the data and their expertise in order to create lessons that fit the learning needs of their students. It is important to note that both of these schools put a tremendous emphasis on a purposeful school culture that serves to support the school model. As Reed explains, "The blended school provides a social environment that must contain clear expectations, habits of mind, ceremonies and rituals, processes, etc. that supports the learning experience and ensures the actualization of the school's mission and vision" (Getting Smart 2011). Hence, the Flex Academies draw upon the features of traditional schools in order to foster the relationships between adults and students that are necessary for children's success. Thus far, both schools have posted promising results. Silicon Valley had an API score of 789 in 2013, which is just below California's benchmark of 800, indicating that this model appears to be a viable approach to schooling. Meanwhile, SF Flex had an API of 734 in 2013, which is significant because it represents an 86-point increase from the previous year, making the largest gain of any SF public school.

❖ *BL: A Student-Centered Approach*

BL is an approach to education rather than an end in and of itself. BL advocates are primarily concerned with the inability of teachers to meet the needs of individual learners in the current model. Accordingly, it is the notion of a student-centered approach to education that lies at the core of BL. Recent literature on this topic has highlighted the tenets of a fully student-centered approach that challenge the current schooling and education paradigm: learning is personalized, competency based, takes place anytime, anywhere, and students exert ownership over their learning (Students at the Center 2014). However, there is a fundamental disconnect between the schools practicing BL and the national organizations—such as iNACOL and CCI—that are setting goals and creating definitions. The people on the ground involved in blended programs are constantly adjusting their approaches, and are simply moving at a faster pace than the observers can codify (Klein 2014a). Accordingly, this section connects the practice on the ground with some of the theory surrounding BL, specifically with regard to personalized learning environments.

➤ *Personalized Learning*

Leadbeater (2003) introduces a theory of personalization applied to education that serves as a good framework for understanding its connection to BL. He imagines that children would be enabled to devise a “greater repertoire of possible scripts for how their education would unfold. At core there would be a common script – the basic curriculum – but that script could branch out in many different ways, to have many different styles and endings.” The aim of personalization in learning is therefore based on self-realization, since “personalized learning allows individual

interpretations of the goals and value of education.” (pp. 68-69). Children can therefore be active and responsible in creating their educational “script,” as students can set their own learning targets, utilize continuous self-assessment and develop the flexibility to learn outside of school and the school day.¹⁵ Of course, theory is only valuable in so far as it can actually be translated into practice. In the case of BL, the core of the movement is a transformation of the instructional design toward a student-centered or personalized approach to learning through the strategic use of technological tools and teacher intervention.

In a 2013 report, the International Association for K-12 Online Learning (iNACOL) claims that BL, at a basic level, is a delivery mechanism for personalized learning. The authors provide a useful working definition: “Personalized learning is tailoring learning for each student’s strengths, needs and interests — including enabling student voice and choice in what, how, when and where they learn — to provide flexibility and supports to ensure mastery of the highest standards possible.” (Patrick et al. 2013, 4). Accordingly, some of the essential components of personalization include student agency, differentiated instruction, immediate intervention and support, flexible pacing, frequent feedback, and performance-based assessments. This approach is therefore based on three core components: progression based on mastery, individual student pathways, and flexible environments.

➤ *Competency or Mastery Education*

The current education model could be described as a “time-based system,” where students learn varying amounts in a fixed period of time (Patrick et al. 2013,

¹⁵ The flexibility would be based on “earned autonomy” achieved through students doing well, demonstrating self-motivation, and becoming more self-regulating.

22). Moreover, the grading structure allows students to pass a class while missing large percentages of content knowledge, where even an “A” student might be lacking complete understanding of the material.¹⁶ In contrast, competency-based learning means that students advance in their lessons based on individual demonstrations of proficiency.¹⁷ Sturgis and Patrick (2011) developed a five-part working definition of competency education:

1. Students advance upon demonstrated mastery.
2. Competencies include explicit, measurable, transferable learning objectives that empower students.
3. Assessment is meaningful and a positive learning experience for students.
4. Students receive rapid, differentiated support based on their individual learning needs.
5. Learning outcomes emphasize competencies that include application and creation of knowledge along with the development of important skills and dispositions.

(Sturgis & Patrick 2011)

A mastery system is typically based on learning objectives, in which students understand what must be done in order to “know and show” their proficiency. The above definition is useful for the present analysis because it clearly highlights how a blended approach could work in service of competency education.

Standards therefore play a crucial role in setting the expectations of what every student must know. Analogies to martial arts or young people earning scout badges serve to explain how a mastery-based system works in education. In karate or kung fu, participants earn belts by demonstrating mastery of several skills, which equate to standards in K-12 education (Horn 2013). For students, advancement comes

¹⁶ Consider that students with a “B” average might be missing 15-20% of the content knowledge. Therefore, many students who get passed on are unprepared for the skills that they need in the next course.

¹⁷ In theory, technology is not required for mastery-based progression, as the basic premise of the approach is to allow students to work at their own pace.

when they have demonstrated a proficiency in the required content. Similarly, a leader will award a badge to a scout for exhibiting sufficient mastery of a skill to progress to the next level (Patrick et al. 2013, 28). There are clear and consistent indicators of what needs to be achieved, but there is flexibility in how these skills are taught, learned and practiced. The consistency is in the standards and the rigor of the assessment, making sure that every student can apply the knowledge and skills that they have learned.

➤ *Individual Learning Pathways*

Student choice manifests itself most clearly through individualized pathways that cater to a child's learning style and preferences. Currently, this concept is more fully fleshed out in theory than in practice, but a number of schools are attempting to implement a variation of the idea (recall that the Flex Academies employ an Individualized Learning Plan). The basic idea behind the individual pathway is that assessments illuminate a student's knowledge of a particular concept, and then mixtures of computer-based and human lessons provide the instruction that the individual needs in order to progress through the unit.¹⁸ Students have a variety of software options to choose from, and move through the content based on demonstrated mastery.

At the beginning of each unit, students take a diagnostic assessment in order to determine what topics they have mastered, and which they have not. Based on the results, kids are assigned lessons that match their needs. The subsequent step will vary greatly depending on the degree to which technology has been blended into the

¹⁸ Hence, a mastery-based progression model is a prerequisite for individual learning pathways.

particular model, as well as how flexible the learning environment is. One way or another, the teacher uses the data to determine what activities suit each student's needs. In a high level blend, the teacher knows which programs are designed to teach the given concept, and therefore will assign a student to start on the software. In theory, teachers will have access to a number of different programs, and they can choose the ones that they feel are best for their students. If the adaptive software is fairly advanced – and many of the major providers have reached this level – then the computer can assign appropriate instruction and practice. The teacher will continue to deliver lessons, but they should really only be teaching a lesson if the data indicates that the child needs that lesson (Klein 2014a). Of course, there is always room for a large group lesson if the data indicates that the majority of the students are struggling with a topic. However, for the students that are not ready for that lesson, or have already mastered the concept, there is no need to include them because it would not offer them much value and their time could be better spent. As the year progresses, the teacher, as well as the student, should come to recognize which learning approaches – whether that means a particular software program, human lessons, peer instruction or collaboration, traditional textbooks, etc. – are best suited for each individual.

At the end of each unit, students are also given options for how they demonstrate mastery. Rather than requiring every student to pass an exam or complete the same culminating assignment, students can show their proficiency in a manner that aligns with their skills and interests. For instance, students might have the option of taking a traditional test, making a presentation or writing a short paper.

Returning to the martial arts analogy, the learner simply needs to demonstrate that he or she has mastered the skill, but there is no reason that one student has to take the same path to demonstrate proficiency as another student does.¹⁹ One example is the Summit Public Schools in Silicon Valley, where they have developed their own mastery-based assessment system (which they hope to make an open-source platform). The model uses a three-part criteria: “Targeted item-bank questions will assess the ‘know and do,’ teacher-built assessments will gauge the ‘understand and apply’ component, and real-world projects will resemble dissertations – student designed and directed projects, approved and monitored by faculty” (Kennedy & Soifer 2013, 20).

Consequently, it becomes clear how a competency-based system allows students to progress through the same content in a variety of ways. The technology is important for the initial data analysis in order to assess each student’s prior knowledge. Then the software takes some of the responsibility off of the teacher by delivering a portion of the content. The difference is that the lesson is based on the learner’s needs, rather than the pacing guide of the traditional model. The computer-based content also provides a much greater degree of flexibility for students to choose the learning path that suits them. However, that does not mean that all students need to work on computers, as some children will decide that they like the traditional textbook and other offline components – which is all part of the *blended* environment. Accordingly, BL is a far superior model for meeting the needs of a diversity of students.

¹⁹ Therefore, students are not at a disadvantage if they have test-anxiety or lack interest in the particular project that the teacher has assigned.

❖ *The Purposeful Use of Technology*

Critics of the education system are quick to point out that technology has fundamentally transformed our society, but the education model continues to persist largely unaltered. Accordingly, education stands to realize the efficiency and productivity gains that come from the appropriate deployment of technology. One of the key failures of past efforts to incorporate technology into the classroom was that they were characterized by “an unswerving faith in the technology’s capacity to improve education and most other things in society,” or what Selwyn (2010) calls a “techno-romantic” vision of education technology (p. 13). In contrast, BL strategically employs technology in order to serve a particular pedagogical end. Furthermore, modern devices provide instant, adaptive feedback that can engage learners in ways that earlier technology could not. Consequently, the BL movement appears to be the catalyst that will finally introduce education to the power of technology.

➤ *Short History of Technology in Education*

Technology has been promising to transform education since the early twentieth century. In 1922, Thomas Edison claimed: “I believe that the motion picture is destined to revolutionize our educational system and that in a few years it will supplant largely, if not entirely, the use of textbooks” (Cuban 1986, 9). Edison expected film to replace books based on its ability as a medium to bring reality into the classroom. However, film turned out to be a symbol of Progressive teaching practices rather than any sort of device for learning. Shortly afterwards, radio entered the classroom with a similar promise: “the central and dominant aim of education by

radio is to bring the world to the classroom, to make universally available the services of the finest teachers, the inspiration of the greatest leaders ... and unfolding world events which through the radio may come as a vibrant and challenge textbook of the air” (Cuban 1986, 19). By the 1950s, both film and radio were largely out of the classroom, replaced by a new enthusiasm for instructional television. Aided by money from the Ford Foundation and the national government, television was sold on the premise that it could do things that teachers could not. In reality, television did next to nothing to change teaching practices, and was used as an accessory, if used at all. Larry Cuban’s analysis of classroom technologies in *Teachers and Machines* (1986) led him to conclude that these new devices remained unused because they only marginally met the problems that teachers identified as important. According to Cuban, teachers adopt innovations that create practical solutions, such as the chalkboard or the textbook (p. 67).

More recently, desktop and personal computers offered a new means to create efficiencies in the classroom. The thought was that by offering engaging and active learning processes connected to real life, computers could prepare young people for the future workplace (Cuban 2001, 170). A new coalition of reformers prompted a push for federal, state and local funds to build technological infrastructure within schools during the 1990s, as the computer to student ratio dropped dramatically from 1980 through the early 2000s.²⁰ However, the availability of computers has not led to increased use, as teachers have continued to use new technology in service of traditional teaching practices without any true changes or gains in the efficiency of

²⁰ Most notably, President Clinton made \$2 billion available for five-year grants from the Technology Literacy Challenge Fund.

learning or learning (Cuban 2001, 174). The abysmal track record of classroom technologies therefore necessarily begs the question of why this round of technology-based reform might succeed.

➤ *Harnessing the Power of Technology*

The online content that is utilized in a BL environment is fundamentally different because it instantly provides automatic feedback and support in a highly engaging and adaptive format (Klein 2014b). These programs are able to respond to the needs of each learner by immediately adjusting the lessons, hints, level of difficulty, pace, sequences and instructional tools. (DreamBox 2014, 4). In other words, these programs are able to differentiate instruction for each student, offering millions of pathways through the curriculum. In addition to built-in assessments, the programs capture behavioral data points such as think time, prep time, and act time, and then use sophisticated data-mining algorithms for segmentation and prediction. The continual assessment is able to offer students the support that they need to progress through the content in a manner that suits them, building their independence in the process through rich, interactive manipulative elements that allow students to make self-directed choices. Meanwhile, the content is highly engaging as the lessons are based in adventures where students choose their personas and stories, which creates “gaming” environments.

Equally important, the software translates the work done in the program into meaningful feedback for teachers, students and parents. Teachers have a much more comprehensive understanding of the areas in which their students are excelling and struggling, which is used to inform instruction (whether its one-on-one, in small

groups or with the whole class). Students themselves are better equipped to take the necessary steps to address their own skill-gaps, while they also develop a stronger self-understanding with regard to their learning styles and preferences. Finally, parents can gain access to their children's learning analytics in order to provide the out-of-school support that enables anytime, anywhere learning.

❖ *Conclusion*

While personalization is indeed possible in a traditional brick-and-mortar classroom, effective and meaningful applications of technology enable differentiation and the flexibility of pacing required to scale personalized learning for each student in the classroom. Accordingly, technology enables high-quality learning experiences in that it “optimizes the learning environment” by giving teachers the ability to deploy their resources to meet the needs of all of their students (Patrick et al. 2013, 18). Putting students on computers or devices frees up the teacher to work in more intimate settings, which is crucial because research has documented that more time spent with teachers in small groups leads to great gains in student achievement (Cooper & Robison 1998). Hence, the power of the BL model is in the combination of the adaptive online content and small group instruction (Klein 2014b).

IV. The Right Time for Blended Learning

❖ Introduction

The BL movement appears to be at the convergence of major trends that challenge the industrial era features of public education, as well as the forces of dynamic conservatism that have kept them in place. In particular, educational outsiders have increasingly attempted to bring their expertise in order to solve the nation's achievement problems, which has most notably led to a vast increase in funding from philanthropic organizations. Furthermore, the school choice agenda has finally overcome historic obstacles, as the charter school movement is perhaps the most powerful mechanism available to educators that truly want to rethink the traditional patterns of schooling. Accordingly, this chapter examines how the BL movement is taking advantage of the available avenues for reform in order to generate momentum. In particular, there appears to be a unique possibility for the charter school and BL movements to reinforce one another in order to overcome the forces of dynamic conservatism.

❖ Alternative Routes to Reform: Philanthropic Support for BL

Implementing BL requires a substantial up front investment (hardware, infrastructure, renovations, etc.) that schools typically cannot afford through their operating budgets alone. Historically, the lack of capital has limited the ability of schools to attempt innovative reforms. However, in the past two decades philanthropic organizations have become a powerful force in education reform, as they have funded a variety of efforts that seek to improve student achievement. In recent years, philanthropic organizations – both large and small – have taken an

interest in BL, and have funded a variety of efforts across the country. Some of the nation's largest foundations – such as Gates, Broad and Dell – have all invested in BL through grants for implementation, as well as research and advocacy for the topic.²¹

Most notably, Next Generation Learning Challenges (NGLC) has sought to accelerate educational innovation through applied technology. Funded primarily by the Bill and Melinda Gates Foundation, NGLC is structured to provide investment capital, create evidence, and accelerate adoption of new models of educational delivery that utilized technology-based solutions. According to their website, “NGLC-funded projects are testing and scaling new models, compiling evidence of what works, and accelerating adoption of approaches that work” (NGLC 2014a). Thus far, NGLC has funded twenty-seven K-12 breakthrough BL models, and has provided their forty-eight grantees with more than \$40 million in funding (NGLC 2014b). Moreover, NGLC has committed to sharing their evidence in order to facilitate the collaboration and support necessary for these new models to realize their full potential. Similarly, the Charter School Growth Fund (CSGF) – although limited to charter schools – has invested twenty percent of its national fund (equivalent to approximately \$30 million) in BL models. NGLC and CSGF are just two examples of organizations that are investing substantial amounts of capital in developing scalable, transformative learning models, and both have shown a keen interest in the promise of BL in particular.²²

²¹ For instance, the Gates Foundation provided nearly two billion dollars for small schools, transforming the movement into a national phenomenon (Schneider 2011, 56).

²² The Silicon School Fund is yet another non-profit investment fund that provides seed funding for BL models, as they intend to fund up to twenty-five new schools by

The Learning Accelerator is another organization partnering with school districts and states in order to expand effective BL practices with regard to personalized learning, mastery-based progression and the effective application of technology. According to their website, “The Learning Accelerator is part architect, part investor: we cultivate solutions to overcome the barriers to implementing blended learning in schools and work directly with districts and states to develop implementation strategies that can be scaled and shared with school districts nationwide” (Learning Accelerator 2014). Accordingly, the Learning Accelerator will mobilize over \$100 million over the next five years in order to support districts seeking to adopt BL, with the goal of identifying successful practices that can be replicated by other districts across the country seeking to implement BL. They will also work with state policymakers in order to design digital learning policies that will develop the capacity, as well as the leadership for BL implementation.

Meanwhile, there are a number of smaller scale efforts from philanthropies and business alike that are geared towards the development of BL. The investment firm Janus gave the Denver Public Schools (DPS) \$2.1 million in order to create a replicable and scalable BL model that improves student achievement and accelerates educational innovation (Augé 2012). Similarly, the Rogers Family Foundation has been working with the Oakland Unified School District in order to implement BL at eight pilot schools. Moreover, many of the pioneers in BL received start-up funding from philanthropies, as, for instance, the Aspire Public Schools blended program has been supported through an investment from the Eli & Edyth Broad Foundation.

2017. The New Schools Venture Fund is another organization worth checking out for further information .

❖ *The National Reform Agenda*

The contemporary national education reform agenda began in 1983 with the publication of *A Nation at Risk*. Above all, the report was a call to action: “We report to the American people that... the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people” (NCEE 1983, 4). ANAR stressed the twin goals of excellence and equity, and shaped a vision of educational change driven by the ideal that all students – particularly those in underserved neighborhoods – should have access to high quality schooling. Less than a year and half later, more than 250 task forces were helping forty-six states to develop comprehensive state action plans to improve educational outcomes (Schwartz et al. 2000, 175). Education was at the top of nearly every state’s political agenda, as the frenzy of state legislation and policy led to the initial idea of national goals for education. Since then, education reform has remained a top priority for the federal government.²³

Most notably, the drive to improve the nation’s schools has created greater opportunities for fundamental systemic change. In particular, the school choice movement has gained significant momentum, while entrepreneurial reformers have been seeking to identify best practices and spread them throughout the system. As a result, those seeking to change education are no longer confined to work within the traditional mechanisms, as the rise of charter schools and availability of funding from

²³ Most notably, President George W. Bush’s 2002 No Child Left Behind (NCLB) bill created groundbreaking accountability measures intended to place greater pressure on underperforming schools. More recently in July 2009, President Obama and his Secretary of Education, Arne Duncan, announced the Race to The Top (RTT) program, a \$4.35 billion competition intended to encourage system reform to improve educational outcomes.

philanthropies and outside organizations have come to meet the demand for innovation. Indeed, BL will succeed where other reform movements have not in large part because of its ability to exercise alternative routes to enact fundamental change.

❖ *The Charter School Movement*

The success of the charter school movement exemplifies the shifting conditions in American education reform. Charter schools are the result of a longstanding debate over school choice that pitted a challenge to the institutional patterns of public schooling against the forces of dynamic conservatism. By promoting the use of competitive forces in public education, school choice calls into question the bureaucratic governance system. While historically this movement has ran into resistance from teachers unions and bureaucrats who fear privatization, the persistent shortcomings of schools have forced key stakeholders to concede to measures that could unleash the possibility of transformational changes. In particular, the school choice debate and the success of the charter school movement have created tremendous opportunities to challenge the forces of dynamic conservatism that have maintained the grammar of schooling.

➤ *The Theory of School Choice*

The economist Milton Friedman, renown as a libertarian who opposed government regulation and championed the private marketplace, was one of the first proponents of “freedom of choice” in education. In his 1955 essay “The Role of Government in Education,” he argued that the government should supply vouchers to every family so that students could attend a school of their choice, as he maintained that the ultimate objective of society should be to maximize the freedom of the

individual or the family. Friedman believed that the introduction of competition would “stimulate the development and improvement” of nonpublic schools to meet consumer demand, as well as “promote a healthy variety of schools.” Competition, according to Friedman, would make public school systems more flexible, and would also “make the salaries of school teachers responsive to market force.” In a genuine system of choice, all students would be enrolled in schools that their parents had chosen for them (Ravitch 2010, 115-117). Chubb and Moe (1990) echo these sentiments in *Politics, Markets, and America’s Schools*, and go a step further in citing the democratic nature of public schools as the reason that they are unable to reform. The authors argue that the adult interest groups of “teachers’ unions and myriad associations of principals, school boards, superintendents, administrators, and professionals—not to mention education schools, book publishers, testing services,” exercise their “direct democratic control over their schools” in order to block reform and serve their own interests (p. 71). Chubb and Moe conclude that school autonomy is maximized where political control is weakest and market forces strongest. Accordingly, they propose a system where schools are held accountable by parents and students, and governed by the invisible hand.

Consequently, the charter school is premised on school choice theory. The original idea for charter schools came in 1988 from Ray Budde and Albert Shanker, both of whom put forward similar ideas of schools that would be experimental and innovative in order to meet the needs of students who were being failed by traditional public schools. Budde envisioned that charters would have a set of specific goals with a bold vision to take risks and work on the cutting edge of research and knowledge

rather than replicating traditional ideas. He believed that this concept would cause the restructuring of school districts by enabling teachers to take charge of decisions about curriculum, management and instruction. Meanwhile, Shanker – the president of the American Federation of Teachers – suggested that teachers should be able to run their own schools within regular schools to pursue innovative ways of educating students that struggled in traditional schools. He wanted these schools to be research programs that would build by example (Ravitch 2010, 122).²⁴

➤ *Charter Schools*

Charter schools are independent public schools run by an organization (ranging from local community groups to non-profits to for-profits) that has obtained a charter from a state-authorized agency. The central idea is that these schools trade increased autonomy for increased accountability. The charter gives the organization a set period to meet its performance expectations, as they are evaluated for renewal based on how well they meet these goals. Meanwhile, they earn funding based on the number of students in their schools. Accordingly, charter schools face both democratic and accountability mechanisms (Maranto & Meshane 2012, 94).

The first charter school opened in Minnesota in 1992, and sparked a movement that appears to be reshaping the American education system. In its early years, the charter school movement was helped by the Center for Education Reform – a new organization that aimed to promote public school choice – and from President Clinton’s 1994 education legislation that established a program to award federal

²⁴ Shanker would withdraw his support and become a major critic of the charter movement in 1993 because he felt that his idea was being used by corporations, entrepreneurs and others for their own ends.

dollars to spur the development of new charter schools. At the time, these schools were opened by anyone that could convince a state-approved agency to grant them a charter, including social service agencies, universities, teachers, parents, philanthropists, hedge-fund managers, for-profit firms, charter-management organizations, community groups, and others (Ravtich 2010, 124-5). Since then, charter schools have become a stable feature of American education.

➤ *The Current State of Charter Schools*

By 2013, forty-two states and Washington D.C. had enacted statuses authorizing charter schools, while the total number of charters has increased at an average rate of 340 schools per year over the last decade (Rebarber & Zgainer 2014, 8). In the 2012-2013 school year, there were over 6,000 charter schools serving more than 2.3 million students. Hence, charter school students comprise more than four percent of the total public school population in the US, which represents an eighty percent increase from 2009 (CREDO 2013).

The charter movement got a further boost recently when the Obama administration made the removal of restrictions on charter schools a high priority in RTT, rewarding states that allowed charters to operate freely. As a result, thirteen states changed their education laws to allow for more charter schools by either lifting or expanding the state-mandated caps (Maranto & McShane, 2012). As U.S. Secretary of Education Arne Duncan explained to reporters, “To be clear, this administration is not looking to open unregulated and unaccountable schools. We want real autonomy for charters combined with a rigorous authorization process and high performance standards” (US DOE 2009). The Obama administration’s push for

charter schools represents a search for innovative and effective models, rather than simply a drive for school choice. As Secretary Duncan explained, “I am advocating for using whatever models work for students, and particularly where improvements have stagnated for years. We cannot continue to do that same thing and expect different results.” Indeed, it is the attitude of giving schools the flexibility and autonomy to try out new solutions that appears to be the impetus for the expansion of charters. I argue that this sentiment will be crucial in driving the BL movement forward.

❖ *Challenging the Grammar of Schooling: BL and Charter Schools*

BL stands to utilize the autonomous and flexible setting of charter schools in order to incur fundamental change. According to the Center for Education Reform’s *Survey of America’s Charter Schools 2014*, six percent of all charter schools utilize BL as their educational approach (Rebarber & Zgainer 2014). As demonstrated in chapter two, BL forces schools to not only rethink classroom settings and instructional models, but also many other related organizational patterns such as the physical facilities, the number of teachers and the school day. As a result, BL stands to flourish in environments that afford the flexibility to easily implement changes at a variety of levels. Accordingly, BL’s success as a reform movement will be driven by its ability to thrive in charter schools, which work *outside* of the traditional system and therefore circumvent the historic problems related to the grammar of schooling. The distinct advantages that charter schools offer BL will allow blended environments to prove themselves as viable alternatives to the traditional instructional model.

This section highlights that the charter school movement on its own represents a serious challenge to the grammar of schooling. Free from the bureaucratic regulations and union contracts, charter schools have a great deal of autonomy and flexibility that traditional schools lack. Charters are also unique in that they are smaller organizations (which make them more nimble), and they are relatively new, meaning that they can start from scratch and are not burdened with legacy solutions. These defining characteristics make charter schools optimal environments for BL to thrive. Accordingly, the combination of these two movements represents the most powerful reform effort in the history of American education.

➤ *New Accountability Measures*

First and foremost, charter schools aid reform because they avoid the political nature of the public schools system. Democratic controls and inefficient bureaucracies have proven to be key obstacles for reform movements. Recall that charters are built around the promise of greater autonomy in exchange for greater accountability. Charter schools are given clear performance expectations, and are evaluated based on how well they have met their goals. When charters come up for renewal (usually every five years), authorizers typically assess: “academic performance; fiscal performance; governance effectiveness; leadership and instructional quality; compliance with the terms of its charter contract and applicable laws and regulations; and, mission fulfillment” (NACSA 2009, 2). Based on the school’s performance on these measures, the charter is either reauthorized and the school continues to operate, or it is denied and the school shuts down. Hence, the democratic accountability of charters differ from traditional schools in that they need

to meet a variety of objectives that are determined beforehand by the operator and the authorizer. Charters therefore avoid the politics associated with school boards, and community control. Parents exercise their power by deciding whether or not they want to send their children to the school, as charters earn funding based on the number of students that are enrolled. Indeed, this system seems to largely be the realization of Chubb and Moe's recommendation.

Consequently, charter schools face both democratic and market accountability mechanisms that are favorable to reform because decision-making lies basically entirely in the hands of the school. Charters that decide to implement a BL program only need to convince the parents of the community that there is value in the approach. Moreover, charter schools are given full control over their budget, which allows for implementation of innovative programs. Charters can allocate their funds as they deem fit, so they invest in teachers, equipment, supplies, etc. in the manner that suits their school rather than as determined by the district's school board. BL charter operators such as Carpe Diem and Rocketship have taken advantage of this autonomy with regard to their staffing models and the physical arrangements of their schools. Carpe Diem Collegiate High School in Arizona uses a flex model and hires only four full-time certified teachers (one for each core academic subject), each of whom are responsible for all of the face-to-face instruction for the 280 students in his or her course (Horn & Staker, 2012).²⁵ Moreover, the Arizona campus includes only five traditional classrooms, (which is fewer than half as many as a traditional school requires for similar enrollment) as students spend the majority of their day in a large

²⁵ The teachers use a support staff of "assistant coaches, guidance counselors, aides, and administrators," that result in both better pay and benefits for these teachers.

room filled with cubicles that contain computers.²⁶ The Carpe Diem model therefore utilizes organizational arrangements that simply would not be possible within the traditional system.

➤ *Teachers Unions*

Perhaps equally important to the autonomy of charter schools is that they do not use unionized teachers. Teachers unions have long been criticized as a major obstacle to reform efforts. In his book *Special Interest*, Terry Moe (2011) argues that teachers unions are at the heart of the nation's education problems – as the most powerful groups in American education, they use this control to promote their own special interests (that are not good for either children or schools). As Moe explains, teachers unions use their power in two ways: they operate from the top-down through their influence in the political process, and from the bottom-up through collective bargaining activities that shape how schools are organized. Charter schools therefore avoid both of these major issues by working outside of the political aspect of traditional school, and not entering into collective bargaining.

The specific rules that unions secure in the typical collective bargaining contract greatly influence how school districts operate, spend money and allocate resources. Among the most important bargaining rules, unionized teachers are only required to work for a certain number of hours, they are protected against dismissal, and are given benefits and pay raises through seniority. Charter schools – particularly ones that are attempting innovative programs that rethink the role of the teacher – are

²⁶ The building cost \$2.7 million to build, whereas a nearby school building currently in the planning stages will cost roughly \$12 million and accommodate only 200 more students than Carpe Diem—over 2.5 times more expensive per student.

able to tell their teachers what is required of them without any pushback.²⁷ More importantly, blended schools can find the teachers that believe in their model rather than trying to convince a unionized teacher of the merits of their program. Teachers who do not fit well in a blended environment can easily be replaced, while schools can require their teachers to work as long as they feel is necessary. Teachers in charter schools are held accountable for their performance, and therefore cannot afford to resist BL if they want to keep their job. The ability of charter schools to find the right teachers for blended classrooms is pivotal for the success of the BL movement, because (as demonstrated in chapter one) it is ultimately teachers that determine the success of reforms.

➤ *Flexibility*

The oldest charter schools were started approximately twenty years ago, while the majority of charters are much younger than that. As a result, charter operators have the distinct advantage of starting their schools with a greater understanding of what resources and tools are available for realizing their vision. In contrast, traditional public schools and districts are often burdened with legacy solutions that are now obsolete, or at least impede the progress of new programs, such as BL. In order to enact changes in a traditional school, money needs to be invested to train people, buy new products, etc. Charter schools can start from scratch, which has proven to be particularly advantageous for blended charter organizations such as Rocketship and Carpe Diem.

²⁷ In theory, teachers at blended schools are actively involved in the iteration of their model and are supported with professional development.

Charter schools are also typically small organizations, which makes them more nimble than traditional public schools. The median charter school enrolls only 286 students in contrast to the average size of a traditional public elementary school (475) or high school (684) (Rebarber & Zgainer 2014, 6). The most commonly cited advantage is that students are part of smaller learning communities and usually receive more personalized attention. For BL, however, smaller organizations are crucial because of the requisite institutional changes required to properly implement a blended program. Charters have fewer people to communicate with, which makes coordination a much easier task (further aided by the freedom that charter have to organize their human capital as they see fit). This is particularly important given the frequent adjustments that are necessary for a BL program to successfully meet the needs of the individual school.

❖ *Early Adopters: Promising Results*

Across the country, a variety of BL schools are achieving high performance on state and national assessments, highlighting the promise of the blended model. Early adopters serving different grade levels, employing different models, and operating under different organizational structures (i.e., charter/independent vs. traditional district public schools) and with varying degrees of support, have demonstrated the potential for BL to produce positive outcomes, most notably in student achievement.

In 2013 KIPP Empower Academy (KEA), a Los Angeles charter elementary school, was the highest API-rated (Academic Performance Index) school in LAUSD (Los Angeles Unified School District). KEA was founded in 2010 as a fully blended

school, employing a classroom rotation approach in order to focus on small group instruction and personalization.²⁸ Currently, more than 90% of the school's students qualify for the federal free and reduced lunch program, and the student body is 87% African Americans and 12% Latino. Second-grade students at KIPP Empower scored 95% proficient in English Language Arts, and 98% proficient in Math. In comparison, only 54% of all LAUSD second-graders score proficient in ELA, and 56% in Math (KIPP:LA 2014). Thus, KEA has been able to not only meet the needs of underserved populations of K-4th grade students, but it has demonstrated that BL models stand to be substantially more effective than traditional instructional approaches.²⁹

Carpe Diem in Yuma, Arizona is a charter school for sixth through twelfth grade students that employs an innovative BL model similar to the Flex Academies, and has consistently posted strong student achievement (see above for details). Carpe Diem's students have performed first in their county for four straight years, and have been the number one school in the state in terms of yearly student growth for two consecutive years (Carpe Diem 2014). Carpe Diem has achieved an average of 92% proficiency and forty percent advanced performance on Arizona's math and reading assessments, despite having per pupil expenditures that are between sixty and seventy percent of a typical public school. Carpe Diem has also had success scaling their model. A new campus in Meridian, Indianapolis, has posted outstanding results on the five Northwest Evaluation Association's Measure of Academic Progress (NWEA

²⁸ KEA chose to adopt a BL model in large part because they lost approximately \$100,000 in funding for a cohort of 100 students as a result of California budget cuts.

²⁹ As a result of KEA's performance, KIPP has decided to expand its BL model to all of its nine schools in LA.

MAP) tests (in Reading, Language Usage, Math, Science-General, Science-Concepts).³⁰ The students gained an average of three years academic growth on the Reading, Language Usage and Science tests, while the average growth in Math was four years. In other words, these students gained the equivalent of three to four years of knowledge in one academic school year.³¹ Accordingly, the Carpe Diem model has garnered a great deal of attention for its innovative approach, cost-cutting measures and outstanding student achievement.

The Mooresville Graded School District (MGSD) in North Carolina has made national headlines for the “digital conversion” that it has undergone since 2007. While both KEA and Carpe Diem’s schools were founded with the BL model in mind, the MGSD is a traditional school district serving nearly 5,600 K-12 students in eight schools, with approximately 750 employees. In 2007, Dr. Mark Edwards took over as the MGSD superintendent and introduced a “digital conversion” plan to utilize technology resources in order to boost academic achievement. Since then, Edwards has brought a BL model to MGSD through commitment to a strong vision and community support, leading to national recognition, including a visit from President Obama. Between 2007 and 2012, proficiency on core subject state exams in reading, math and science rose from sixty-eight to eighty-nine percent, the graduation rate rose fourteen points to ninety-one, and the percentage of students attending two-

³⁰ According to Carpe Diem’s website: “NWEA-MAP provides our third party assessment data. A state-aligned computer-based testing system, MAP (growth), is built on 30 years of research and refinement, and adapts to the student in real-time as the test progresses for a pinpoint picture of learning achievement and readiness. NWEA-MAP provides comparative data to inform educators’ instructional decisions about which programs or optional strategies might be used to help kids learn.”

³¹ Carpe Diem students’ historic average is two years of curriculum completed in one school year.

or four-year colleges similarly rose from seventy-five to eighty-eight percent (Hess et al. 2013). (Notably, the graduation rate for African-American students rose from sixty-seven percent in 2007 to ninety-five percent five years later). According to Edwards, “We’ve seen significant gains in achievement in every grade level, every content area, and by every data point imaginable — from state assessments to SAT and ACT scores, graduation rates, rates in reduction of dropouts, and the reductions in disciplinary suspensions” (CISCO n.d.). Perhaps most intriguing about Mooresville’s transition to BL is that spending has not risen, ranking 100th out of 115 school districts in NC. Edwards reached out to the community, and was supported by Lowe’s Home Improvement with a “jump start” award of \$250,000. However, MGSD relied primarily on their operating budget (it has funded ninety-eight percent of the project), as they have entirely eliminated costly textbooks by utilizing a variety of open source curriculum content, which keeps spending in the range of about forty dollars per student. The MGSD’s independent conversion to BL offers a promising model that other traditional school districts can look to for inspiration and direction, and demonstrates that BL innovation is indeed possible within the public school system as long as all the ingredients are in place.

These three school networks and districts (KEA, Carpe Diem and MGSD) simply give a glimpse into the ability of BL – when purposefully and intelligently executed – to increase students’ academic achievement. These BL pioneers are notable because they are performing substantially better than traditional public schools despite serving different student bodies through a variety of blended approaches. The success of these early adopters has established proof points that have

prompted larger scale BL efforts in traditional school districts. The District of Columbia Public Schools (DCPS) has launched a BL initiative in order to advance academic goals, utilizing blended instruction as a means to “support the schools, not dictate to them what you think is best” (Lautzenheiser & Hochleitner 2014).

Accordingly, all one hundred and eleven schools in DCPS have implemented versions of BL that meet the needs of their particular circumstances, resulting in a diversity of blended environments. A number of schools have embraced the station-rotation model (similar to Aspire) for core subject areas, while other schools are providing students with personalized daily schedules or playlists for Math instruction.

Thus far the results seem promising in DCPS. An independent study found that across thirty-one schools, DC students who used ST Math (a game-based visual math instructional software program) achieved a seventeen-percentage-point gain on the DC Comprehensive Assessment System (compared with a four and a half percentage-point gain for students who did not use the program). Although some schools have struggled with the implementation of BL – most notably there has been a substantial degree of teacher turnover for those that encountered great difficulty adjusting to the new teaching model – DCPS remains committed to implementing BL models at every school in the district. Other states and school districts across the country have followed suit, as Pennsylvania, for instance, launched the Pennsylvania Hybrid Learning Initiative in the fall of 2012 in order to put a student-centric BL model in fifteen schools.

❖ *Creating a Sustainable Innovation Model*

Beyond simply demonstrating the promise of BL as an instructional model, the early adopters have also worked to identify sustainable implementation processes, as well as to share best practices. Accordingly, the BL pioneers are not just creating proof points, but they are also consciously working to drive the reform movement forwards. The early adopters and the organizations supporting them have been very active in documenting their implementation processes and the crucial components of their models. The rapid spread of BL can therefore largely be attributed to the dedication of these actors to help new schools enter into BL, as well as the commitment of a select few schools to constantly innovating their models in order to maximize the student and teacher's experience.

In terms of implementation guidelines, there have been a variety of publications from schools, organizations and advocacy groups that are geared towards helping schools interested in BL make a smooth transition. Digital Learning Now! – a national campaign to create high quality digital learning environments through advocacy, policy, collaboration and leadership – has released two versions of their “Blended Learning Implementation Guide.” The sixty-page BLIG outlines in great detail the conditions and planning necessary for BL, and offers a comprehensive implementation strategy, ranging from infrastructure and tech support to professional development and school culture. The report uses evidence from over a dozen BL schools and networks, and focuses on foundational ingredients, as well as major obstacles. Individual BL schools and networks have also been active in documenting their BL implementations in order to help other schools looking to follow their lead. The Aspire Public Schools published a Blended Learning Handbook, which is

equally, if not more comprehensive than the BLIG. Aspire’s Handbook covers everything from best practices and online resources to student preparation and troubleshooting tactics. Moreover, the Handbook is complete with twenty-one lessons that support implementation, as well as additional curricula for digital media literacy for teachers and students alike. Meanwhile, schools and organizations have published numerous other examples of successful BL transition.³² The availability of these resources has made it substantially easier for schools interested in BL to make the transformation, while an increasing number of organizations and companies have arisen to help meet the demand as well.³³

Additionally, a number of the BL pioneers are committed to continued innovation of their models, which will be a major impetus driving the movement forwards. Despite success with their blended approaches, many of these schools are set on constantly improving in order to better meet the goals of personalization and deeper learning.³⁴ Accordingly, BL leaders such as Rocketship Education and Summit Public Schools have continued to adjust their models despite the success of their students in order to maximize the educational experience. Summit San Jose illustrates this process, as it uses three principal streams of data to drive improvement.

³² The Michael and Susan Dell Foundation sponsored the publication of a series of case studies on early BL adopters. Meanwhile, smaller scale efforts have also produced high quality publications. The Rogers Family Foundation has done a great job covering their pilot BL programs in the Oakland Unified School District.

³³ For example, the City Bridge Foundation sponsors Education Innovation Fellows that have helped in the DCPS BL transition, while Education Elements is a leading company dedicated to bringing high quality BL to their clients.

³⁴ According to the Hewlett Foundation, “Deeper learning is an umbrella term for the skills and knowledge that students must possess to succeed in 21st century jobs and civic life. At its heart is a set of competencies students must master in order to develop a keen understanding of academic content and apply their knowledge to problems in the classroom and on the job.”

First, all students in the Summit’s blended math program take a brief weekly online survey to assess their progress in “self-directed learning behaviors, growth in content and cognitive skills, and overall user satisfaction.” (Kennedy & Soifer 2013, 16). The data from these surveys aims to capture how students experience the blended model, and how it might be improved upon. Second, Summit holds weekly focus groups for thirty-five minutes with four to eight students, using these conversations to better assess how students perceive their learning experience. Finally, Summit San Jose also uses a mix of teacher-designed “content assessments” and data generated from online programs in order to track a few key metrics that provide a “weekly snapshot of aggregate and individual student performance.” Summit’s use of granular data demonstrates how rapid feedback loops go beyond day-to-day activities, and allow blended models to evolve in order to enhance the student experience.

The iterative nature of the Summit BL model highlights a key feature of the BL movement: the core transition is about personalizing instruction by rethinking the fundamental features of school, such as relationships between students and teachers and the way that learning and assessments inform one another. Technology is simply a tool in this process, and different BL environments can produce a variety of efficiencies and benefits that lead to similar results with regard to the ultimate goal of the development of the learner. Additionally, the experimental and innovative nature of BL points to the crucial need for flexibility in order to meet the needs of a variety of students. As BL spreads and more experimental practices are attempted, the movement as a whole will make vast improvements in terms of meeting the goal of personalized learning.

❖ *BL and Charter Schools: Moving the Needle Forward*

Although it has taken over twenty years, charter schools have finally established themselves as a legitimate alternative to traditional public schools. The Center for Research on Education Outcomes (CREDO) at Stanford University, the nation's foremost independent analyst of charter school effectiveness, has released two extensive studies on the topic – one in 2009 and another in 2013. The most recent study – which comprised records from 1.3 million students across twenty-six states – found that charter school students gained an additional eight days of learning each year in reading as compared to their local peers in traditional public schools, and that there was no significant difference in mathematics learning (CREDO 2013). The CREDO report (2013) is a pivotal turning point for the movement, as charters have now reached the point of no significant difference.³⁵ Charter schools therefore validate the theories of school choice advocates, as they prove that private market forces can indeed be beneficial to public education.

Indeed, BL will greatly benefit from the school choice model and deregulation. Consequently, the charter school and BL movements appear to be intimately connected, and seem destined to reinforce the success of one another. The results from early BL adopters demonstrate that this new instructional model appears to be superior to traditional approaches. Given the competitive dynamic in the charter sector, schools will seek out best practices from the market leaders. Considering the efficiencies that BL promotes, it seems inevitable that it will spread across the sector,

³⁵ The phrase “no significant difference” refers to the fact that charter schools perform at least as well as traditional public schools, and are therefore considered legitimate alternatives.

particularly as the technology improves and BL charter networks continue to expand nationwide. The responsibility therefore falls upon traditional school districts to respond to these innovations if they are truly committed to innovation delivering (high) quality education for their students.³⁶

➤ *Co-Opetition*

One of the major concerns with charters is that their improvements are not translating to traditional schools. Hence, the fear is that they will serve to deregulate and subsequently privatize public schooling. Yet, as the BL movement is demonstrating, charter schools are succeeding in living up to their original intention of bringing innovation to traditional school districts. While districts do not have the capacity to alter their governance structures, they are able to employ innovative classroom practices. Accordingly, the DCPS' BL initiative is one example of a traditional district that has sought to capitalize on trends that started in the charter sector. What critics of charter schools fail to recognize is that traditional districts, in theory, have as much flexibility to implement new measures as do charters. However, the political nature of the traditional system, as well as the burden of legacy solutions has largely prevented districts from utilizing the means that they have available. Thus, going forward the responsibility will fall upon district officials to respond to the innovations that the charter sector is initiating.

³⁶ There of course is the danger of two-tiered systems where traditional schools are left with the students who were unable to get into charters, and offer a much lower quality product. Indeed, such a situation is playing out currently in New Orleans. Part of the responsibility therefore falls upon local and state governments to guard against this development.

The most beneficial outcome would be a situation of *co-opetition*, where charter schools and districts alike engage in cooperative competition that improves outcomes for both sectors. The concept of co-opetition recognizes that there can be multiple winners in the marketplace: “When companies work together, they can create a much larger and more valuable market than they ever could by working individually. Companies then compete with each other to determine who gets the largest share of the market” (Brandenburger & Nalebuff 1997, 2). The added advantage of co-opetition is that companies also become active participants in shaping the industry’s future. Although the concept needs to be slightly modified for the field of education, the underlying principles remain the same. Indeed, there is already evidence of this dynamic at work with regard to BL implementation, as schools readily share practices, invite visitors and publish material (such as the guides discussed above). At the Aspire Public Schools, for instance, they collaborate with other charter networks (such as the Summit Public Schools, Rocketship, Highline and KIPP) in order to discuss ways to improve their blended models, as well as select the best software.³⁷ Accordingly, these early adopters are discovering new BL models and optimal organizational structures that are changing the nature of schools. Therefore, while many people will hesitate at the idea of using business (or private sector) practices in public education, it is clear that competitive forces – particularly in the form of co-opetition – actually stand to be quite beneficial for schools.

❖ *A Historic Opportunity*

³⁷ There are other examples of charter networks partnering with one another, as well as traditional school districts outside of BL. For example, in Texas the YES Prep Public School Network partners with the Spring Branch Independent School District, where they share facilities, best practices, and other innovations.

The economic recession and the failure of reform efforts over the past thirty years have prompted the federal government to actively challenge the status quo of the public education system. Since education is primarily the responsibility of the states, funding for K-12 schooling relies heavily on state governments and local property taxes. States and districts are evidently facing a funding cliff as they try to recover from the economic downturn, and therefore have little option but to make budget cuts. As a result, districts will need to create cost efficiencies while they simultaneously attempt to improve outcomes for children. Consequently, reform efforts cannot simply eliminate waste by cutting costs; rather, they will need to rethink the status quo. As Secretary of Education Arne Duncan explains, “By far, the best strategy for boosting productivity is to leverage transformational change in the educational system to improve outcomes for children. To do so, requires a fundamental rethinking of the structure and delivery of education in the United States” (Duncan 2010). In order to “leverage transformational change,” reformers need to not only identify best practices to incorporate more of what works, but they also must think innovatively in order to come up with experimental approaches that increase “educational productivity.”

Particularly given the inability of reform efforts over the past thirty years to answer the challenge that *ANAR* presented, there is an increasing willingness to challenge the status quo both rhetorically and in practice. As Duncan stated in the same speech:

Our K-12 system largely still adheres to the century-old, industrial-age factory model of education.... But the factory model of education is the wrong model for the 21st century.... The legacy of the factory model of schooling is that tens of billions of dollars are tied up in unproductive use of time and

technology, in underused school buildings, in antiquated compensation systems, and in inefficient school finance systems.... I am urging state and districts start to think more boldly about ways to improve educational productivity.

(Duncan 2010)

Indeed, the federal government attempted to incentivize innovation through the Race to the Top (RTT) competition, which made funding available for states with comprehensive approaches to reform and districts committed to “bold, locally directed improvements in learning and teaching” (US DOE 2013, 3). In particular, all sixteen of the RTT district grant winners employed BL environments, individualized learning plans, and competency-based models. The emphasis on moving away from the industrial era school model and personalizing the educational environment for students and educators supports Duncan’s claim that “a quiet revolution is underway in America today in education” (Duncan 2010). Indeed, the BL and charter school movements seem to be the forces driving this shift.

❖ *Conclusion*

The persistent failure of the American education system paved the way for alternative routes to reform that now stand to compete with the forces of dynamic conservatism. The availability of funding for innovative models that rethink patterns of education and the charter school movement both represent sustained challenges to the status quo. Indeed, the BL movement has emerged precisely because it capitalized on these newly available mechanisms. Meanwhile, the impressive performance of early BL adopters and their commitment to supporting one another hold great promise for the future of the movement. Furthermore, the entrance of private market forces into the field of public education through the charter school movement enhances the

possibility of BL's spread as a best practice. Finally, the trend of technology adoption in contemporary life has sped up exponentially. Consider how long it took for cell phones or flat screen televisions to improve: while they were expensive at the beginning and only sold by bigger companies, more players quickly entered the field, which raised the quality and lowered the cost. Accordingly, the rapid adoption rate of technology enhances BL's ability to spread. Consequently, it appears that the forces of dynamic conservatism are beginning to crumble in the face of innovations that promote higher quality learning.

V. The Consequences of Blended Learning

❖ *Introduction*

Despite the great promise of educational reform movements, there are inevitably externalities – both positive and negative – that are produced when the reforms interact with the school system and the societal context within which they operate. The BL movement will be no different: as it matures, different (unforeseen) factors will come into play that will necessarily cause deviations from the intended goals. This chapter operates under the assumption that BL will indeed take hold, and seeks to understand how new schooling patterns stands to impact the teaching profession and the achievement gap.

❖ *New Roles for Teachers*

BL environments necessarily call for a different role for the teacher that will force schools to rethink their staffing models. BL aims to empower teachers by equipping them with the tools to differentiate instruction for each of their students, while shifting the responsibility for many of the administrative and basic tasks to the technology. The online content means that teachers are no longer the sole delivery mechanism for content, which changes the lecture-based structure of classes. In a BL model, teachers are better equipped to meet the needs of their students with the available data. Additionally, they are given more chances to hone their skills and to deliver meaningful lessons to their students.³⁸ Teachers also have the opportunity to

³⁸ If we consider a station rotation model with three groups, the teacher is delivering three lessons during a class period when they used to only get one chance at the lesson. Accordingly, the instructor should be improving their skills delivering the

specialize in their content areas, and focus on developing assignments for their students that promote deeper learning and higher order skills.

An opinion piece written by a teacher at a BL school (Carpe Diem Meridian) offers great insight into the ways in which BL treats teachers more professionally. The author explains that despite receiving prizes for excellence in teaching, he was considering leaving the field entirely, and it was the BL model that enabled him to view teaching as a “true profession and career” (Woodward 2013). He explains the advantages of his new role: “I am able to design projects, experiments, and real-world applications to bring the concepts that the students are learning through their digital curriculum to life. I am able to teach them how to think creatively.” Moreover, the author discusses the collaborative nature of the staff (which includes only four teachers and fourteen total adults), as they meet daily before and after each school day, and spend one hour each week specifically on professional development. The BL model also leaves room for teachers to assume leadership roles and earn a higher salary while maintaining their teaching responsibilities. The article concludes that the BL environment has enabled him to view “teaching as a true vocation,” as it provides both sustainability and professionalism in the opportunities it offers teachers.

The greatest danger that BL poses for the teaching profession is the possibility for a capital-labor substitution, where technology replaces teachers. As more of the teaching responsibility gets shifted online, fewer teachers (not necessarily fewer adults, however) can meet the needs of more students. Recall the Carpe Diem model that only utilizes one teacher for each core academic subject despite the fact that they

content since they get more practice and have a better understanding of what works and what does not.

enroll approximately 280 students.³⁹ However, “Blended learning is not about replacing teachers with machines...blended learning relies upon skilled teachers... Without highly effective teachers and instruction, a blended-learning model cannot be successful or sustainable” (Woodward 2013). While a few models have indeed attempted to cut costs (Rocketship, for instance, uses less money on teachers and then reinvests this capital to open new schools), the goal of BL is to create personalized learning environments, which depends on strong teacher-student relationships. Moreover, only humans can foster deeper learning and teach higher order skills. Thus, the BL movement needs to be deliberate in explaining how the new instructional model works and what role devices are playing.

❖ *Rethinking the Teaching Accountability*

A report by the New Teacher Project (2009) identified a fundamental inability of the nation’s schools to accurately assess teacher performance, and to use the available information in meaningful ways (Weisberg et al. 2009, 2). The report went on to explain that the failure of the evaluation systems to provide credible information about instructional performance enforces the “Widget Effect,” where school districts assume that classroom effectiveness is the same from teacher to teacher, and that they can therefore be treated as interchangeable parts (p. 4). Indeed, more than ninety-four percent of teachers receive a top rating, while less than one percent are deemed unsatisfactory. However, eighty-one percent of administrators say there is a tenured teacher in their school is performing poorly (p. 6). Because evaluation systems fail to

³⁹ All of the schools that employ more innovative models (such as the flex approach) stress the importance of the advisory role that teachers play, as well as the strong school culture.

differentiate teacher effectiveness, excellent teachers remain unrecognized, while the problem of chronically low-performing teachers goes unaddressed.

Past attempts to implement value-added measures of teachers have been unsuccessful, in part, because they are not based on credible measures of student performance.⁴⁰ BL radically alters the available information because of the constant stream of data that it generates about student, and therefore teacher performance. If a teacher-evaluation system can be built around such measures, then it would be far easier to identify ineffective teachers. The ability to differentiate teachers by quality could open up possibilities for better professional development to provide support for teachers who are struggling. In particular, accurate assessments could go a long way towards fighting the teachers unions, who insist on treating all teachers equally. Moreover, such assessments could also reward great performance. Consequently, teacher-measures based on BL data could raise the standards for entering the profession, and work towards a master teacher model.

Indeed, if these assessments succeeded in improving teacher quality it would have tremendous benefits for children, as no other measured aspect of schools is as important in terms of student achievement (Hanushek 2011, 41). A body of research has highlighted that effective teachers not only improve student achievement, but they also improve later life outcomes in terms of economic and social benefits (Chetty et al., 2012). Stanford economist Eric Hanushek (2011) has demonstrated that if we replaced the least effective twelve percent of teachers with those of average quality,

⁴⁰ Teacher evaluations from the NCLB legislation have been tied to student test scores, which alone are poor measures of teacher effectiveness. Understandably, these value added measures have generated a great deal of controversy.

U.S. achievement would be on par with Finland. Moreover, he estimates that this improvement in achievement would increase the students' cumulative lifetime income by a total of \$1.4 million per classroom taught, while it would raise the total U.S. economic output by \$112 *trillion* in present value (Hanushek 2011, 43). Thus, if BL could indeed change the nature of the teaching profession, the gains would be huge for students, as well as for the country.

❖ *Narrowing the Achievement Gap*

It has already been discussed how BL caters to a diversity of learning styles, which is great for students that do not perform well in traditional school settings. Furthermore, in moving away from the one-size-fits-all approach to teaching, the BL environment affords particular advantages for the students that were unable to keep pace with the rest of the class, or had been passed along from grade to grade with knowledge gaps. The personalized approach makes it far easier to address remediation by giving students the support that they need. BL also holds kids accountable for their learning, which can prevent such problems from developing in the first place. Thus, if BL can be implemented effectively throughout the education system, it stands to be a powerful tool for addressing problems of achievement and access for undeserved student groups.

The data generated about each individual's academic performance is critically important for students that have fallen behind in the traditional teaching model. The learning analytics that the online software generates from the formative assessments provides a comprehensive report of the knowledge and skills of each student. Teachers therefore have a clear understanding of where each child in their classroom

stands with regard to the curriculum standards that need to be covered. The availability of this information is critical in addressing what Salman Khan (2012) calls the problem of “Swiss cheese learning.” Since concepts build on one another, if a student lacks true understanding of an earlier topic, they will be unprepared to tackle more advanced units. The current approach to education measures effort based on increments of time rather than on levels of mastery. Consider that students who pass with a seventy-five percent average are missing one-quarter of the knowledge that they truly need to know. Thus, it is easy to see how these gaps grow as students progress through the system. In contrast, a mastery-based approach forces each student to demonstrate proficiency on all of the prior standards before they move on to the next one. Accordingly, BL prevents “Swiss cheese learning,” and also allows students to go back and address the holes in their knowledge.

The ability to readily identify students’ proficiencies also creates a better system for holding children accountable for their own learning. Just how BL contributes to transparency about teacher performance, it is also a powerful tool to ensure that kids are not slacking off. The traditional approach to education makes it relatively easy for students to remain unnoticed. Moreover, when students are passed on to the next grade without demonstrating proficiency in the material, it conveys the message that the outcome is fixed regardless of their efforts. As a result, students frequently do not do the required work, and even skip class without serious repercussions because they remain anonymous in their schools. In contrast, the availability of comprehensive data in BL environments provides all of the stakeholders in a child’s learning with the information about their performance and

attendance. Teachers can hold students that are not making progress accountable, and easily relay this information to the school's administrative staff as well as to parents. The transparency makes it much more difficult for students to fall through the cracks, as their needs can be met academically in the classroom, while other issues can be addressed through guidance counselors and support staff. Meanwhile, BL environments enable administrators to it make clear that low levels of student performance will not be tolerated, as it provides the necessary tools to monitor problematic student behaviors.

Improving the achievement of underserved populations of students would also have larger societal implications. Consider that if African American and Hispanic students performed academically at the same level as white students, the overall performance of the United States would approach the top of the global ranking and add tens of trillions of dollars to the economy (EEC 2013, 13). Meanwhile, simply raising the graduation rate for students of color to ninety percent could add as much as \$6.6 billion in annual earnings to the American economy (EEC 2013, 14). Accordingly, any efforts that successfully address the achievement gap would have far-reaching implications for the rest of society. Most importantly, improving academic achievement could begin to address the problems of poverty and inequality that pervade in the United States today.

❖ *Might BL Exacerbate Inequality?*

Despite the great promise that BL offers for helping students who have historically not been given proper attention and fallen behind, the movement might also generate its own systemic inequalities, or even be coopted by outside interests.

One clear danger of BL is that it offers opportunities for the top students to race ahead of their peers, thereby leaving the achievement gap intact. As policies concerning age-based groupings are eased, schools will have to make their own decisions about how they want to allow students to progress. If students are simply given free reign to finish their courses as soon as they demonstrate proficiency, some might finish the K-12 requirements long before they turn eighteen. One innovative solution that BL schools are employing is a system of “tapping.” Rather than allowing superstar students to start the next unit when they finish the prior one, they are given further tasks that can promote deeper learning (Klein 2014b). In practice this could mean having kids help their peers with the material, since convention states that true mastery of a subject only comes when one is able to *teach* it to another. Top students could become assistants for their teachers, leading small groups of struggling students and fostering a collaborative atmosphere. Otherwise, teachers should utilize creative projects that force students to apply their knowledge to the real world. Students might get involved with local organizations, or have an internship that helps them to hone their skills in environments outside of the classroom.

Yet, it is not clear that there is an inherent problem with early completion. While a fifteen year old that has satisfied all of the graduation requirements challenges norms, it also opens up the possibility of rethinking the role that the youth play in society. Why hold these capable children back if they can make a meaningful contribution? The age-based system of schooling is legitimized through its place in the educational status quo, but just because it has historically been that way does not mean it has to remain so. If this truly becomes an issue, then perhaps schools should

rethink graduation requirements or extend learning possibilities outside of formal schooling. Indeed, it might be an opportunity to raise the expectations that we have of our nation's youth, as for instance, they could be put to work solving glaring problems in the community. Thus, just because early completion challenges convention and our preconceived notions of school does not mean that it is a problem in and of itself.

❖ *The Danger of Vocational Education*

A separate danger is the potential for outside interests to coopt BL movement for their own purposes, similar to what happened with the Progressive Movement. While the current advocates of BL genuinely believe in the benefits a personalized approach to learning offers for students, history dictates that those who join the movement later on will not necessarily have the same goals in mind. In particular, I fear the potential for the data generated about students might set them on career tracks from a young age. There seems to be a parallel to the curricular differentiation and vocational education movements of the Progressive period. Advisors might recommend an individual learning pathway that emphasizes vocational training over higher order skills. Or businesses/companies could similarly come to students and incentivize them to take a path that leads them directly into the workforce upon completion. It is not hard to conjure up justifications for such an approach, as it guarantees that youths are not only prepared to work in the global economy, but it actually guarantees them jobs. However, the BL movement in its present form is about giving kids the skills, self-awareness and independence that foster life-long learning and problem solving.

Indeed, given the economic recession, the rising costs of college, and the low postsecondary completion rates for low-income youth, there has been a revised push for vocational education. The idea is that personalized instruction can connect curricula and pedagogy with students' career interests. The justification for these efforts is to give underserved students both a rigorous curriculum and additional help in securing employment. By offering them workplace internships and career mentoring, these students could transition into certificate and credential programs towards the end of high school (Yonezawa et al. 2012, 19).⁴¹ Despite the benefits of training low-income youth for immediate employment, there appears to be a danger that personalization comes to mean vocational education, just how meeting the needs of the whole child in the Progressive period turned into curricular differentiation.

History clearly demonstrates that personalization can quickly become a tool for perpetuating the inequalities of the social order rather than fixing them. One of the key problems of providing vocational training for students is that technology is rapidly changing the nature of employment, as many of the jobs that current students will hold do not even exist yet. Moreover, can we really expect teenagers to know what career path they want to follow for the rest of their lives? Using personalization as a means for occupational training would limit the potential of students. A BL approach teaches deep understanding and higher order skills as a means to promote independence and social mobility. BL prepares students to meet the demands of an

⁴¹ For instance, the Pathways to Prosperity Project at the Harvard Graduate School of Education has promoted dual-enrollment, college and career readiness, and work-linked learning in order to revive vocational education. Similarly, the Career Academy Support Network at the University of California, Berkeley has made efforts to add a career focus to the course offerings, curricula and pedagogical practices.

evolving world, and should not be used as a mechanism to lock children into an apprenticeship model. It cannot be stressed enough that a widespread reinstatement of vocational education would be detrimental to the BL movement, as well as to the empowerment of low-income youths.

❖ *School Level Reform: BL as a Turnaround Strategy and Problems of Access*

Since schools are funded primarily by local taxpayer dollars, poor neighborhoods tend to have low-performing schools that lack resources and are typically staffed with poor quality teachers and leaders. As a result, a cycle of poverty has been perpetuated where the children of these neighborhoods do not have access to a quality education. Based on the current turnaround work that is being done in Detroit there is hope that BL can make a difference at the lowest-performing schools. The Education Achievement Authority (EAA) is Michigan's school improvement district that has assumed operation of the bottom five percent of schools across the state. The EAA took over fifteen schools in "horrible physical, cultural and academic shape," and has been successful thus far in turning them around (Ark 2013). Central to the EAA's work is their BL model that uses a student-centered competency-based approach. The learning platform that the EAA developed (called Buzz) provides students with choices over their learning pathways, application projects for teachers, multiple options for mastery, student tracking, opportunities for peer coaching as well as frequent feedback, finer grading levels, and a collaborative environment for teachers.¹ Indeed, in its first year of operation all six of the EAA schools in Detroit rank in the top twenty in growth, with the majority of students showing two or more

years of growth. Hence, the EAA provides a proof point that BL can be a powerful turnaround strategy for schools and districts that have historically struggled.

Given BL's reliance on technology and the Internet, another serious danger is the growth of the "digital divide" in K-12 education between schools with and without adequate hardware, software and infrastructure to meet their students' needs. The term digital divide refers to the "inequities among individuals who have access to technology and opportunities to learn information communication technology skills" (Hohlfeld, et al., 2008). In K-12 education the digital divide operates on three levels relating to (1) the equitable access to "hardware, software, the Internet, and technology support," (2) the frequency and purpose of the technology's use, and (3) how technology empowers individuals within schools. A four-year study of Florida's public schools found evidence of a digital divide between schools of low and high socioeconomic status schools, particularly at the first level, as accessibility and support substantially favored students in the most economically prosperous schools. If the issue is left unaddressed, the divide could be exacerbated as BL spreads across the country, and actually widen the achievement gap. However, BL could also serve as the impetus to focus on solving problems of technology access, as the spread of blended environments could increase exposure to the digital divide and prompt governments, philanthropies and other organizations to search for solutions.

❖ *Conclusion*

By leveraging the capabilities of technology in an environment conducive to change, the BL movement is presenting a powerful challenge to the institutional patterns of governance, teaching and learning in American public education.

If the BL movement is indeed successful in transforming the instructional model of education, it is clear that a number of other considerations will come into play.

Therefore, the BL movement needs to generate clear goals about what it wants to achieve so that it is not used to serve the ends of outside interests. However, if BL can overcome these obstacles then it stands to change the underlying processes of schooling to increase educational productivity, which would have a reverberating effect through American society.

VI. Conclusion

❖ *Transforming the Instructional Model*

Education is an evolutionary process that goes forward with social, cultural and material trends. Similar to how reformers at the turn of the twentieth century responded to the massive changes wrought by industrialization and urbanization, reform efforts in the present day are grappling with the effects of the information revolution and globalization. In both the Progressive era and contemporary times, the public education system has been tasked with handling problems of inequality, opportunity and societal progress. Indeed, there are a number of parallels that can be drawn between the Progressive education and BL movements. Notably, they both present fundamental challenges to the traditional patterns of schooling stemming from a core belief that the instructional model must do more to meet the needs of different learners. In particular, the theories behind the Progressives' child-centered approach and the current student-centered model both emphasize an active learning process that utilizes personalized instruction, real-world applications and problem solving as mechanisms to develop the innate capabilities of children.

The two key differences between the Progressive era and today are the availability of technology as a tool to enable these environments, and the unique convergence of reforms that have weakened the forces of dynamic conservatism. The *purposeful* use of technology as a learning tool represents something fundamentally new for schooling, and has made the student-centered model of education a seemingly attainable goal. Indeed, the success of a diversity of BL approaches – united in their use of adaptive online content in order to give students greater control

of their learning – suggests that the BL instructional model is indeed going to be a lasting feature in American education.⁴² In order to facilitate the spread of BL models, the first step that policymakers can take is to allow for the realization of a competency-based model of education by rethinking seat-time requirements and class size restrictions. Meanwhile, state and local governments must facilitate technology adoption, remove the restrictions on charter schools, and rethink teacher assessment and compensation. Policymakers also need to look at problems of school funding, as well as the rules governing content adoption. Another key point of change is the assessment regime, as it directly relates to standards, content, instructional material and much more.

❖ *Further Implications*

The historic convergence of a number of key trends in education and society promote the serious possibility for shifting the educational paradigm in the next twenty years. I believe that an educational revolution is necessary in order to rid the American school system of its obsolete industrial era features. Accordingly, the BL movement could serve as the catalyst for a fundamental rethinking of the traditional organizational and institutional patterns of public education. However, in order to reconstruct the American system of public education there needs to be a clear understanding of the fundamental purpose of school.

The key point of failure in the modern reform agenda is that we are unable to envision the end goal that we are working towards. Academic achievement and

⁴² Of course, further research is needed on the topic, but a number of think tanks, foundations and other independent analysts have committed themselves to undertake such projects.

economic improvement are measurements – they are not ends in and of themselves. Similarly, equity and excellence – the twin goals of the national reform agenda – were intended to be in service of a higher good. The seminal text that informs the theory of politics and education in the Western world comes from Plato’s *Republic*.

Lawrence Cremin captures Plato’s analysis of education:

In order to talk about the good life, we have to talk about the good society; and in order to talk about the good society, we have to talk about the kind of education that will bring that society into existence and sustain it. Hence, there is no vision of the good life that does not imply a set of educational policies; and conversely, every educational policy has implicit in it a vision of the good life.

(Cremin 1965, 2)

In the US, it was Thomas Jefferson who first proposed a state education system of public schooling, citing the inextricable link between education and the politics of a free society. Horace Mann followed in Jefferson’s footsteps in his quest to bring “common schools” to society, as he believed that they held the “key to all human progress” (Cremin 1965, 5). Then it was John Dewey who picked up Plato’s line of reasoning in his belief that the public school would be the mechanism for society to shape its own destiny. These theorists each discussed education towards the specific end of achieving a “good society.” Yet, in contemporary times we have somehow lost sight of the role that education plays in sustaining a thriving democratic society.

As compared with the Progressive era, today there is a noticeable absence of reformers that view education in terms of its higher purpose. Dewey famously stated: “A democracy is more than a form of government, it is primarily a mode of associated living, of conjoint communicated experience” (Dewey 1902, 101-102).

Recall from chapter one that Dewey wanted to make schools an instrument of social

reform, as his vision of Progressive education was inextricably linked to his ideal of an open, democratic community in which people learned from one another (Zilversmit 1993, 8). Thus, while the fundamental goal of education for the child was individual growth, the ultimate purpose of school was the growth of the larger community. Present day reform movements lack such theoretical underpinnings. One of the recurring issues in contemporary education reform is that people have different notions of the problem because everyone approaches the matter with a particular perspective (for instance, a management consultant might identify efficiency issues, while a social activist would see problems of equity and access). In order to find genuine solutions, we need a clear vision of the end goal that we are working towards.

Thus, for a true revolution in American education there needs to be an articulation of a higher good that is not simply in economic or nationalistic terms. I believe that by challenging the current paradigm, the BL movement stands to open up such a discussion and to raise the difficult questions that we are not asking (such as whether schools perpetuate existing power structures or seek to change them by providing opportunities for social mobility). There needs to be a revived discussion about the civic mission of education that prepares children for life in a democracy and active citizenship.

It is important to note that the student-centered model of education is helping to promote an educational model that empowers children and begins to address the broader question of the purpose of school. A classroom environment in which students rely on one another fosters collaboration and teaches children about how to

be members in a community. By assigning kids projects that deal with contemporary problems, they not only learn lifelong skills (such as problem-solving, teamwork and risk-taking), but they also engage in critical discussions about how to improve society. When students are immersed in authentic learning experiences that take them into their local community, they are assuming the role of active citizens. Accordingly, such an approach to learning stands to develop a generation of students that want to shape the world around them, rather than find their place in the status quo.

Yet, lasting change will also require alterations to people's beliefs. If the BL movement is to realize its revolutionary capacity it will need grassroots, bottom-up support. The key stakeholders in our schools – which necessarily implicates everyone in society – need to generate the willpower to make this vision a reality. Parent organizations and other community groups need to be active and get involved in education reform. Furthermore, we need to change the way we look at our schools and our youth. If we can stimulate this meaningful discussion, education stands to be this generation's Civil Rights Movement by providing a means to end poverty, rather than simply to escape it.

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