

The Case for Improving and Expanding Time in School:

A Review of Key Research and Practice

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COMMON SENSE TELLS US THAT WHEN IT COMES TO LEARNING, TIME MATTERS. An individual simply cannot advance in any given area of study without committing a certain amount of time to grasping new content, practicing and honing skills, and then harnessing knowledge and skills to realize specific aims. Think of the chess master who plays match after match to improve his game or the scientist who toils long hours in her laboratory to unlock the mysteries of an intricate phenomenon. For them, becoming more adept in their chosen field results, in no small part, from the time they invest.

The great irony is that our nation's public school system has, by its rigid adherence to the conventional calendar of 180 six-and-a-half-hour days for roughly 100 years, essentially disregarded the fundamental connection between time and learning. Consider that while the expectations for how schools prepare the next generation of American workers and citizens have risen dramatically, education and policy leaders have usually not updated policies and practices around learning time to meet these mounting demands. The school calendar looks much the same as it did a century ago.

According to the 1994 [National Education Commission on Time and Learning](#), to expect a much higher degree of learning from today's young people, without providing them additional time to assimilate content and develop skills constitutes no less than "self-deception... [that] asks the impossible of our students." The Commission report then concluded with a stark observation: "If the United States is to grasp the larger education ambitions for which it is reaching, we must strike the shackles of time from our schools."¹ And that was 20 years ago; since then, the complexity of the world and the base level of knowledge and skills needed to thrive in the 21st century have only grown. Having more time in school to meet these ever-intensifying demands would seem all the more pressing.

How can more time in school lead to more learning and, by extension, greater success in life? As this review will highlight, both research and practice indicate that adding time to the school day and/or year can have a meaningfully positive impact on student proficiency and, indeed, upon a child's entire educational experience. Such enhancement can be especially consequential for economically disadvantaged students, who tend to enter school trailing behind their more affluent peers academically, continue to lag as they proceed through each grade, and have fewer opportunities outside of school for learning. For these millions of students, more time in school can be a path to equity.

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The evidence makes clear that expanding school time holds this potential because, when planned and implemented well, it confers three distinct, though interdependent, benefits to both students and teachers:

- a. More engaged time in **academic** classes, allowing broader and deeper coverage of curricula, as well as more individualized learning support;
- b. More dedicated time for **teacher collaboration and embedded professional development** that enable educators to strengthen instruction and develop a shared commitment to upholding high expectations; and
- c. More time devoted to **enrichment** classes and activities that expand students' educational experiences and boost engagement in school.

Figure 1.1
Number of Instructional Days/Year
Public, Non-Charter
Mean, 25th and 75th Percentiles

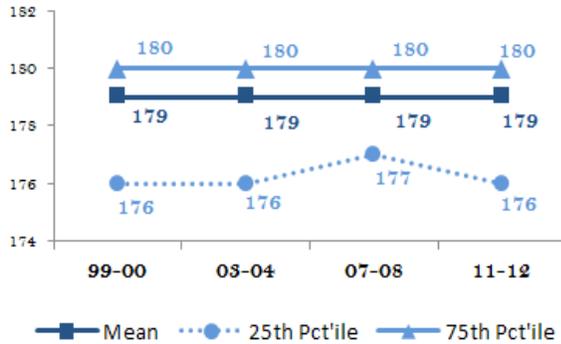
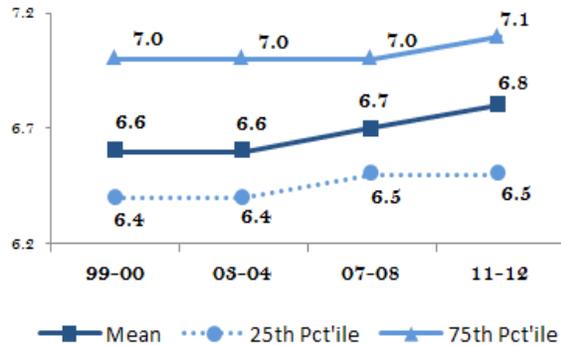


Figure 1.2
Number of Hours/Day
Public, Non-Charter
Mean, 25th and 75th Percentiles



Source: Schools and Staffing Survey, 1999, 2003, 2007, 2011

In the following pages, we explore these three benefits, which emerge as a redesigned education, built upon a longer school day and year, opens up new learning and growth opportunities. Using a mix of formal research inquiries and effective practices studies from the field, we consider evidence that demonstrates how time relates to each of the three benefits. Along with explicating the value that more time in schools can bring, the research also makes clear that time is a resource which must be used well and in concert with a continuous focus on quality implementation to realize its full potential.

School Time in America

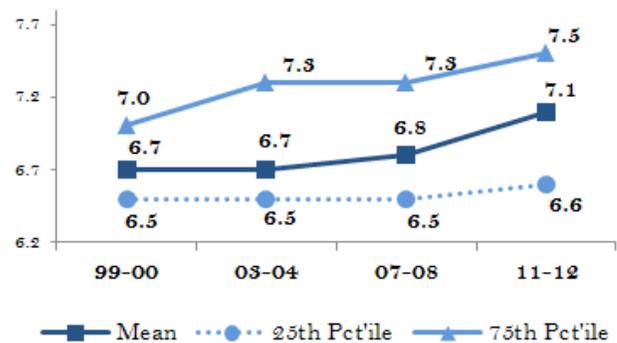
Before diving into the three facets of having more time in school, it is helpful first to lay out some basic facts about the American school schedule and calendar. Analysis of the federal Schools and Staffing Survey, the only nationally representative data source available for identifying variations in time across schools, shows that the average school year of 179 days has remained unchanged over at least the decade, while the average school day has also changed little, standing at 6.8 hours for non-charter schools. Perhaps even more important to understand is that schools in the lowest quartile do not average much less time than the highest. (That is, the gap between the 25th and 75th percentiles is just 4 days and 0.6 hours, respectively). This narrow range of the length of the school year and day suggests that time expectations are remarkably uniform. (Figure 1.1 and 1.2)

A second fact indicated by the SASS data is that the proportion of schools that are breaking from the standard is growing. The trend in a longer school day is particularly apparent among charter schools, which have taken advantage of their autonomy from contract constraints and

state and district policy related to school time to operate with longer days. As such, the average charter school day has grown markedly over the last decade, with particular growth in the upper quartile.² (Figure 2)

Charter schools may be at the leading edge of this move to increase school time, but they are not alone. In its latest count of schools with at least a seven-hour day and at least 30 more minutes than surrounding schools, NCTL found a total of over 1,200 non-charter schools that met the criteria, representing about 60 percent of the extended-time schools population.³

Figure 2
Number of Hours/Day
Public, Charter
Mean, 25th and 75th Percentiles



Source: Schools and Staffing Survey, 1999, 2003, 2007, 2011

The following sections will make clear why an increasing number of educators have found it worth the challenge of overcoming logistical and resource barriers to expand school time. Still, it is essential to keep in mind that even with the spread of expanded-time schools, they still represent a small minority within the greater American school landscape.

Time and Student Achievement

The place to begin in exploring how expanded time plays a role in advancing student learning is to look first at the broader question of what factors contribute to making schools effective or, put another way, what makes high-performing schools work? The question resonates in an era when turning around chronically low-performing schools, especially those that serve large portions of high-poverty children, tops the national agenda. In recent years, a number of scholars have begun to apply complex analytical tools to identify particular practices and policies that do, in fact, generate real and lasting improvements in student outcomes. Among these, the condition of having significantly greater time than the norm consistently emerges as one of the key elements. A few of the more compelling research studies include:

- ◆ [A study from Harvard economist Roland Fryer](#) examined charter schools of New York City to identify those elements within schools that have the greatest impact on academic outcomes. Fryer determined that instructional time of at least 300 more hours than the conventional district calendar is one of the strongest predictors of higher achievement (along with high-dosage tutoring, consistent feedback to teachers, use of data, and high expectations). Meanwhile, traditional factors presumed to have a positive impact on student achievement like smaller class size and advanced teacher qualifications were found to have minimal effect.⁴
- ◆ Using essentially the same data set, Stanford University economist Caroline Hoxby employed a [multivariate analysis](#) to identify how strongly specific school policies—from board composition to curricular choices to school structures—correlate with student outcomes. Hoxby and her colleagues found that total learning time was one of the strongest predictors of student outcomes among the long list of policies they had identified and analyzed. (Because most charter schools have a day longer than the district schools, Hoxby and colleagues used the indicator of a longer school year as a proxy for significantly more learning time in order to differentiate among charters.)⁵
- ◆ In a mixed-methods study designed to understand why middle school students in [four Boston charter schools](#) significantly outperformed students in district middle schools, the [American Institute of Research](#) reported that one of the major structural differences

between the two types of schools was their hours of operation. Students at these four Boston charters attend school for substantially more hours per day and more days per year than their peers in district schools. (In fact, these charter school students attend for the equivalent of an extra 62 traditional-schedule days per year.) The authors indicate that this resource of additional time enables the schools to build in many more opportunities for core instruction, academic support, and teacher development and collaboration.⁶

- ◆ Likewise, an [evaluation of the Promise Academy](#), the charter school run by the Harlem Children's Zone, suggested that the expanded day and year are key to its strong outcomes.⁷

With expanded time identified as a key ingredient in successful schools, one group of scholars took a look at 15 empirical studies of schools that had extended days and/or years to determine if students performed better in schools once they had more time. This [meta-analysis](#) found that adding time was, more often than not, associated with improved schoolwide outcomes, noting stronger effects among schools serving primarily at-risk students.⁸

The pivotal role of time in these schools that produce high (or higher) student performance, most of which serve large proportions of disadvantaged students, aligns with two other major areas of education research.

First, many researchers have suggested that more time in school (i.e., formal educational settings) can help to overcome the negative effects of poverty on learning, like poorer health, less stable home lives, and fewer out-of-school learning opportunities. The clearest way to demonstrate the

Instructional time of at least 300 more annual hours than the conventional is one of the strongest predictors of higher achievement.

positive effects of school on at-risk students is to examine what performance is like during the period when students are consistently engaged in school (i.e., September through May) versus performance during those extended times when they are not (i.e., summer). A [meta-analysis](#) of studies that looked at the impact of the prolonged absence from school determined that the lowest-SES group declined in both reading and math. (Higher SES groups also lost the equivalent of one month of learning in math, but gained proficiency in reading over the summer.)⁹

More dramatically, a [well-known study](#) suggests that the widening achievement gap between low- and high-SES students might be traced back entirely to the long summer vacation. Examining a large cohort of students over the course of five years, the authors identified the gap in academic achievement between high- and low-SES

students widening over the summer months, and narrowing during the school year.¹⁰ Considering similar findings from a much broader data set, [one set of scholars](#) declared then that schools, given their record of promoting learning growth among low-income students when they are actually there, can be “equalizers,” if only poor students would spend more time in school.¹¹

The second reason why it stands to reason that highly-effective schools are those with considerably more time than the conventional is that, almost by definition, they provide more time in classrooms. And more time in class should then, assuming reasonably efficient instruction, translate into more raw learning time or, as it is known in the literature, “time on task.” A substantial body of research has long identified quantity of time on task by itself as a key determinant of student performance on an individual level.

The conceptual framework connecting time to learning first took root in 1963 when educational psychologist John Carroll articulated a “[Model of School Learning](#).” His framework unpacked the commonsensical connection between time and learning, demonstrating in sound educational terms how quantity of time serves as the pivot point in what he called the “degree of learning” that any individual achieves.¹² Since then, many studies have confirmed Carroll’s theory and, specifically, have delved into the phenomenon that spending more time in productive learning environments does, indeed, typically lead to increases in proficiency. For example:

- ◆ An [analysis of three years of test data](#) from Illinois schools validated that the more time individual students spent in reading and math class, the higher their scores in those subjects.¹³
- ◆ [A team of researchers found](#) that the number of minutes students spent reading each day during reading period held a causal relationship to reading achievement.¹⁴
- ◆ In a [series of experiments](#), one scholar determined a direct correlation between time students spent studying a passage and proficiency on a fact-based assessment, finding that the more time students dedicated to studying the passage, the greater their performance in both the near- and longer-term.¹⁵
- ◆ [Research based](#) on a large dataset of classroom observations in California found that differences in the amount of engaged learning time among students accounted for 9 percent of differences in student outcomes in elementary grades—a strong association in the field of education.¹⁶
- ◆ A [later study](#), using similar methodology, discovered that after disaggregating student outcomes by performance cohorts (i.e., examining four different student groups arranged according to their scores),

the amount of time students spent engaged in learning was able to predict 36 percent of test score variance among the lowest performers.¹⁷

Thus, schools with substantially more allotted time than average that, in turn, provide students with more time in academic classes than they would otherwise have are more likely to generate better student performance, especially among those who lag most.

A concrete illustration of this dynamic comes through an [interesting study](#) conducted by the education research organization McREL. In it, researchers surveyed teachers with many years experience to determine how many hours they would need to enable students to reach proficiency in learning standards for language arts, civics, mathematics, and science across four different grade spans. On average, the teachers estimated that teaching what students were expected to learn in these subjects would take, at grades 5, 8 and 12, considerably more time than the roughly 900 instructional hours that are available during a standard school year.¹⁸ (Table 1, p. 5)

With the majority of states across the country now implementing the Common Core State Standards (CCSS), the difference between the time needed to teach to standards and the time available [will only grow](#) because learning expectations are more rigorous and students will need to demonstrate higher degrees of achievement in order to be deemed proficient.¹⁹

Consider that in Massachusetts, a state whose prior standards were [generally considered](#) to be of nearly equivalent rigor to those of CCSS, only 38 percent of [teachers believe](#) they had sufficient time to teach the curriculum.²⁰ By contrast, 85 percent of teachers in Massachusetts Expanded Learning Time (ELT) schools believe they have sufficient time with their students to reach learning goals. (ELT schools are part of a statewide program to expand the school year by 300 hours, meaning each ELT school operates with an instructional day that is roughly 100 minutes longer than that of other district schools.) Massachusetts ELT teachers report the following advantages of having more time to teach:

- Coverage of more material and examining topics in greater depth;
- Completing, reinforcing, and extending lessons;
- Connecting concepts occurring in different classes;
- Setting context and repeating content, if necessary;
- Answering students’ questions; and
- Discussing and reflecting on lessons.²¹

Activating this broader array of teaching strategies has a direct, positive impact on students. As [one ELT teacher describes](#), “More learning time has significantly increased student engagement and allows students and

Table 1
Estimates of Total Instructional Time Needed (in hours)
To Teach Standards-Based Curricula in Four Academic Domains

Academic Domain	Grade Level			
	2 nd Grade	5 th Grade	8 th Grade	12 th Grade
Language Arts	447	455	608	258
Civics	57	201	275	546
Mathematics	245	289	281	509
Science	90	129	260	215
TOTAL	819	1,052	1,422	1,128

Source: Florian, Teacher Survey of Standards-based Instruction: Addressing Time, 1999.

staff to establish more meaningful relationships that create credibility in the classroom.”²²

Digging Deeper on Time Use in Schools

The evidence is clear that, given the strong connection between time and learning, expanding learning time in schools can contribute significantly to better performance for individual students and for the student body as a whole, with particular impact among populations of at-risk students.

Of course, the research cited above also makes plain that more learning time is not the standalone factor of effective schools, but a core component that lives within a multifaceted system to promote student learning and growth. As educators seek to harness the power of more time, research indicates that they must focus on two inter-related dimensions of the organization and execution of the educational program to generate the intended effects of more time on student learning.

The first aspect relates to how schools structure the use of time within the day and across the year. That is, the specific ways that teachers and students spend their time (e.g., duration of particular classes, the balance between academics and enrichment, the amount of time for teacher collaboration, etc.) matters as much as the total amount of time available for learning. High-performing schools do not just have more time, then, but also employ an integrated series of practices to maximize use of that time. Practices include: continuously analyzing data measuring student learning and targeting instruction to individual student needs, managing classrooms tightly to “make every minute count,” and consistently holding students to high expectations for learning and behavior.

In its publication, *Time Well Spent*, NCTL describes how school time in more effective schools operates as a single gear embedded within the complex machinery of educational resources that must turn together to achieve the promise of enhancing learning. (Figure 3, p. 6) Recall that in his research Roland Fryer described a similar dynamic of interconnected practices that blend to produce conditions that lead to higher student performance. Likewise, Katherine Merseth [describes](#) the process well in her book about five high-performing charter schools:

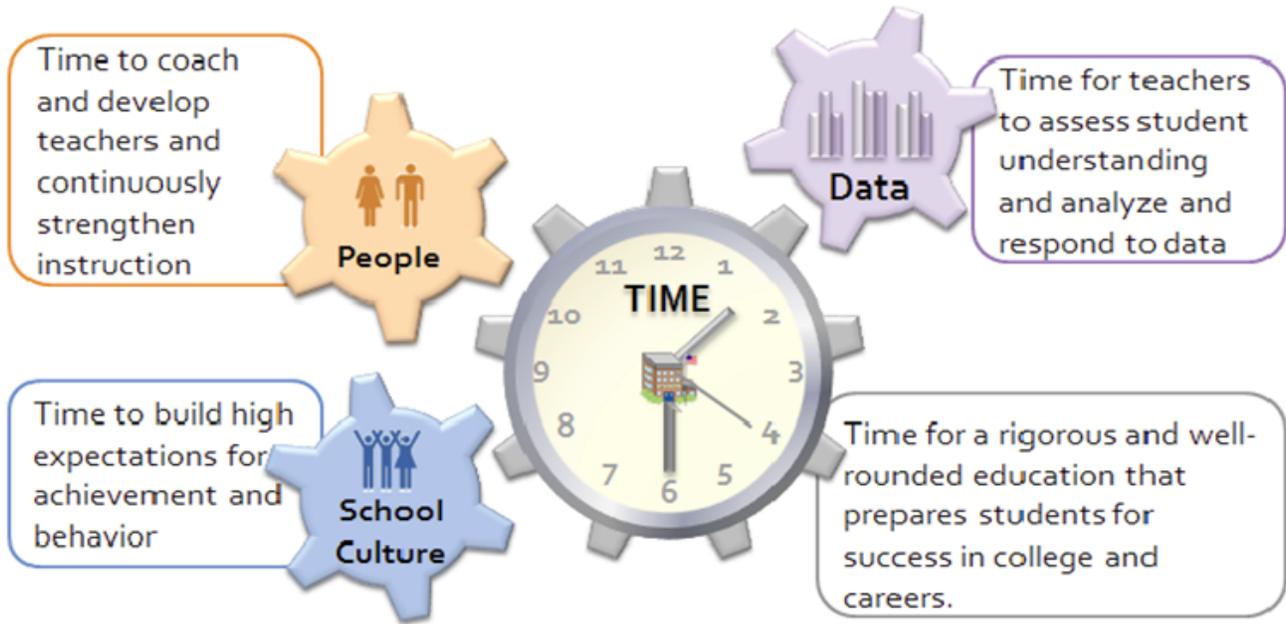
High-performing schools do not just have more time, but also employ an integrated series of practices to maximize use of that time.

The purposefulness with which these schools structure time illustrates their priority for academics and facilitates the pursuit of their missions.... These practices, combined with deliberate structuring of people and nurturing culture, enable these charters to maximize time on task....

The opposite is also true, of course. In less effective schools, time allotted for instruction is often wasted. [Research](#) from California indicates that schools that use time inefficiently—that is, those where a combination of factors act to erode allotted time for learning—tend to cluster in schools with large numbers of high-poverty students. At these schools, interruptions to instruction, ranging from discipline problems to the lack of capable substitute teachers, end up reducing real learning time.

The second (and related) issue concerns the hard-to-measure

Figure 3
Four Interlocking Gears of School Success



Source: Kaplan and Chan, *Time Well Spent*, 2011

sure, but still powerful, matter of instructional quality. A large body of research has demonstrated that quality of instruction is perhaps the most significant in-school factor contributing to student achievement. It is for this reason that the most extensive review of the effects of expanded time on student outcomes concluded that:

...[t]he content and instructional strategies used in school are paramount to the success or failure of extending school time. It is only common sense that if additional school time is not used for instructional activities or if additional instruction is poor in quality, it is unlikely to lead to achievement gains.... Going further, we would suggest that instructional practices can be viewed as mediators of extended school time effects on students. That is, the effectiveness of instruction might determine whether extended school time has positive, negative, or no effects on student outcomes.²⁷

The relationship between the quantity of time and learning cannot, in other words, be considered in isolation; instead, time's impact is governed by the user. Teachers who are effective within a conventional schedule will likely advance student learning further with any time added precisely because they would be inclined to use that "extra time" well.²⁸

A [piece of research](#) that draws upon data from the Programme for International Student Assessment (PISA)—a triennial test in reading, math, and science for 15-year olds administered in dozens of countries—confirms

this interplay between time and instructional quality, as indicated by metrics related to classroom environment. Because PISA asks students (as well as principals and teachers) to complete a survey that includes a range of questions related to school and learning context, the researchers were able to identify and analyze associations among learning time, other components of the learning environment like teacher professional development and instructional practices, and student performance together. They found that even as more instructional time generally translated to better outcomes, "the benefit of additional instructional time appears to vary with the quality of the classroom environment." The authors derived the quality of environment through a formula that accounted for survey responses on the level of class disruptions and student and teacher behavior. So, the higher the quality indicators (e.g., fewer disruptions, more student and teacher interactions, etc.), the greater the effect of increased time on student outcomes.²⁹

Teacher Learning and Collaboration

Because the impact of time spent learning for students is mediated by the quality of the instruction they receive during that time, more successful schools do not simply provide more classroom time, but also strive to make that classroom time as efficacious as possible. And the prime way to increase efficacy is by strengthening pedagogy. As the [National Staff Development Council](#) (NSDC) states plainly, "Efforts to improve student achievement can succeed only by building the capacity of teachers to improve their instructional practice...."³⁰ The question that then

naturally emerges is how to build this capacity. Research demonstrates that, as with students, providing expanded opportunities for teacher learning plays a pivotal role.

The learning process for teachers entails two key components. First, evidence indicates that advancing teacher aptitude is best achieved not by keeping teachers isolated from one another, but rather by structuring opportunities for teachers to convene, working on instructional improvements collaboratively.

Why is teacher collaboration so essential? Optimally, these opportunities to work together will lead to the formation of what are known as “professional learning communities,” or PLCs. An approach that has become more widely pursued over the last decade, PLCs encourage teachers to develop a culture of cooperation with a shared objective of improving their instruction together. Several research studies confirm the value of PLCs. For example:

- ◆ [One study](#) showed that compared to traditional professional development meetings, collaborative planning time (also known as “embedded learning opportunities”) led to much higher incidence of reflective practice among teachers and, as the author explains, reflecting on practice is a first step towards strengthening instruction.³¹
- ◆ [Researchers](#) from the Center on Organizing and Restructuring Schools have found definitively that in schools with well-developed PLCs—as measured by teachers reporting high levels of collective responsibility for student learning—students performed better in reading, math, science, and history. The authors of the report stress that students tend to do better in class because they receive the consistent message from teachers that everyone *should* strive to do their best. This messaging to students comes about as the adults develop their own shared commitment to hold one another accountable for improved outcomes. The mutual professional obligation, in turn, emerges from, and is reinforced by, frequent interactions among and between teachers.³²

The second feature of effective systems for teacher learning and, in turn, instructional improvement dovetails the first: committing *time* to collaborate. Richard DuFour, a leading expert on collaboration, [summarizes](#) the connection: “For teachers to participate in such a powerful process, the school must ensure that everyone belongs to a team that focuses on student learning. *Each team must have time to meet during the workday and throughout the school year.*”³³

Indeed, there is considerable evidence to suggest that absent these opportunities to sit down together and discuss student learning needs and their own abilities to address those needs, teachers are much less likely to form PLCs and, in turn, to have an impact on learning

outcomes. One [set of researchers](#) from Minnesota and Ohio, for example, conducted a study of the teaching staffs in 24 schools to try to determine those elements that might affect the formation of strong PLCs. These researchers found that, among the various school conditions they identified, having a regular time for teachers to meet together was the most powerful factor—one that explained up to 70 percent of the variation in the relative strength of PLCs among schools.³⁴

Incidentally, having sufficient time is not important just for the effective operation of PLCs, but also for professional learning that revolves around the acquisition of particular skills and implementation of specific curricula, a set of work that typically takes place in a more formal or workshop model. The Institute of Education Sciences conducted a [meta-analysis](#) of over 1,300 studies which linked teacher professional learning practices to student achievement and found that programs delivering “a positive and significant effect” were those that averaged 49 annual hours in the professional development being evaluated. On average, these programs enabled teachers to help their students perform at a much higher level (compared to students in classrooms whose teachers did not participate in the professional development). Meanwhile, those programs with fewer than 30 hours of training for teachers had negligible effect on student performance.³⁵

Evidence indicates that advancing teacher aptitude is best achieved by structuring opportunities for teachers to work on instructional improvements collaboratively.

Giving teachers time to collaborate and learn together to strengthen instruction seems obvious and, yet, often meets obstacles in American schools. The NSDC reports that teachers in the United States typically have three to five hours per week reserved for lesson planning, but that this time is seldom held in conjunction with colleagues.³⁶ Further, available data from the Organisation for Economic Cooperation and Development indicates that the proportion of time American teachers have outside of classrooms to prepare for instruction is much lower than the international average.³⁷

The lack of teacher collaboration time is evident from a number of sources:

- ◆ [A survey](#) from the National Center for Literacy Education found that teachers believe the most effective form of professional learning is collaboration with colleagues—dedicated time when they can prepare for and reflect on lessons together. Yet, respondents reported that they have little opportunity to do this kind of collaborative work. Only 32 percent of respon-

dents have a chance to frequently co-create or reflect with colleagues about particular lessons; 21 percent are given time to examine student work jointly and consistently; and only 14 percent dependably receive feedback from colleagues.³⁸

- ◆ According to data collected through a Scholastic [teacher survey](#), educators have an average of just 15 minutes per day—about 75 minutes per week—for collaboration.³⁹
- ◆ An analysis of teacher contracts in a [database](#) of many of the largest school districts in the country reveals that only about 40 percent mention teacher collaboration at all, and of that number, a mere handful specify set times for this collaboration to take place.⁴⁰

In schools with more time in the day, however, available evidence suggests that teachers meet more frequently. Among Massachusetts ELT schools, for example, principals reported that teachers spend an extra hour (or more) per week collaborating than they did when they operated with a day closer to the standard 6.5 hours.⁴¹ In the high-performing schools studied in NCTL’s [Time for Teachers](#), the schools averaged almost two hours per week for scheduled collaboration, on top of an hour for individual coaching, an hour for schoolwide trainings, and over nine hours for individual planning and informal collaboration.⁴²

While the amount of collaboration time needed each week to generate meaningful impact on student achievement is uncertain, one piece of evidence suggests that the difference between what qualifies as sufficient time in collaboration and what might be inadequate is relatively modest in real terms—roughly one hour per week. In the [2010 MetLife survey](#) of the American teacher, high-collaboration schools were defined as those where teachers meet an average of 3.4 hours per week, compared to low-collaboration schools, where teachers meet an aver-

age of 2.3 hours weekly. Still, survey responses indicate that this extra hour can have a marked effect on the proclivity of teachers to work together, with teachers much more likely to respond positively that they collaborate and to do so in productive ways.⁴³ (Table 2)

As much of the nation’s teaching force transitions to integrate the Common Core into classrooms, the need for collaboration has become even more pronounced. A survey of teachers by *Education Week* found that 71 percent of respondents sought more collaborative planning time to work with their peers so that they could more effectively re-align instruction to the new standards.⁴⁴

It is worth noting, too, that even as collaborative planning and review sessions stand as the hallmark of effective professional learning, [high-performing schools](#) also put other related practices in place, as well. These include: teams of teachers analyzing student performance data, coaching and support of individual teachers, and peer observations. One principal describes the rationale for dedicating so much time to this multi-faceted program for building teacher capacity: “Our goal is to be a place where every teacher gets better at their craft every day.”⁴⁵

A Well-Rounded Education

Without a doubt, the primary purpose of school is to prepare every student to read, write, calculate, and analyze. But most Americans also hold schools to a more far-reaching mandate. [Public surveys](#) frequently show [wide support](#) for the notion that schools should, in addition to developing academic skills, furnish students with experiences that nurture aptitude in critical thinking, problem solving, teamwork, and the like. They also value the inclusion of arts, music, and other enrichments within school.⁴⁶ Within the confines of the standard American school schedule, however, the task of satisfying several agendas

Table 2

Higher Level vs. Lower Level of Teacher Collaboration at School: Attitudes and Experience Profile

Frequency of Collaborative Activities (% responding always/often)	All Teachers	
	Higher (3.4 hrs./week)	Lower (2.3 hrs./week)
Teachers meet in teams to learn what is necessary to help their students achieve at higher levels	98%	63%
Teachers examine and discuss student work with each other regularly	93%	55%
My school structures time for teachers to work together	94%	47%
My principal’s decisions on school improvement are influenced by faculty input	92%	48%
Beginning teachers have opportunities to work with more experienced teachers	95%	59%

Source: *MetLife Survey of the American Teacher*, 2009, pp. 21-22

at once is tremendously challenging.

As a result, the second facet of schools' mission—affording students a well-rounded education—tends to take a back seat, even though research indicates that these “secondary” educational opportunities can have enormous impact on student learning and growth.

This trend of favoring academics over well-roundedness is patently obvious just by looking at how students are spending their time in school. In a [2008 study](#), the Center on Education Policy found that elementary students spent, on average, 142 more minutes per week in English classes and 88 more minutes per week in math than in the days before the 2002 No Child Left Behind Act.

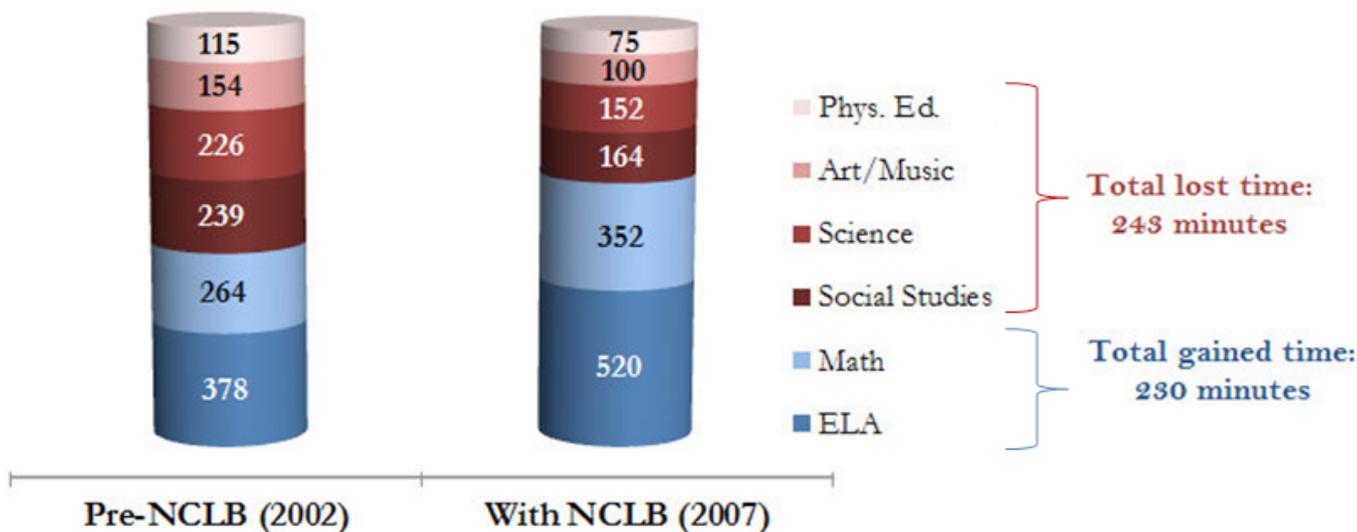
In the zero-sum game of school time, increases in some classes necessarily mean decreased time in others. For the schools surveyed, the classes that most often lost time include science and social studies (now meeting about 75 fewer minutes per week), followed by art (a 57-minute loss), and physical education (40 minutes).⁴⁷ (Figure 4)

Perhaps not surprisingly, the effect of this narrowing usually hits low-income students harder than their more affluent peers and does so in two ways. First, there are some indications that students in low-achieving schools—which are much more likely to be serving high-poverty populations—are shedding enrichments at a faster clip. A [report](#) from the Government Accountability Office found that teachers in schools designated as “needs improvement,” or

that had higher percentages of minority students, were more likely to report decreased time spent in the arts than teachers from schools that were not deemed in need of improvement. Simultaneously, these same teachers from “needs improvement” schools reported increased time spent in math and English classes or remediation sessions.⁴⁸ This decreasing time spent on arts in struggling schools might help explain why the New York City comptroller [reported](#) that arts teacher positions were much more likely to be cut from schools serving primarily poor students. While 20 percent of schools citywide lacked an art teacher, nearly half of these schools are located in the poorest neighborhoods.⁴⁹

Second, poorer students are less likely to have access to enrichment learning during hours outside of school, including the summer months. Data cited by Robert Putnam [shows](#) that the gap in spending on out-of-school enrichment has, over the last 30 years, remained essentially flat for lower-income families, while spending has risen dramatically for upper-income families over the same period. It seems, then, that as schools have scaled back their capacity to furnish an array of enrichments, more affluent parents have sometimes overcome the loss by accessing private programs or better supporting their schools to supply these types of activities.⁵⁰ [Fayette County, Kentucky](#), for example, registers a stark divide in the amount of activity fees that schools serving more affluent communities have raised compared to schools with mostly poor students. These additional funds support everything

Figure 4
Number of Weekly Minutes of Allotted Instructional Time
Pre-NCLB (2002) vs. With NCLB (2007)
By Subject



Source: Center on Education Policy, 2008.

from field trips to after-school athletic events, so less funds means fewer programs for students to develop non-academic skills and interests.⁵¹ Similarly, in San Francisco, overall cutbacks to schools have pushed more affluent parents to fundraise to offset the decline of public dollars. [Notes](#) one observer, “The growing reliance on private dollars has widened inequities between the impoverished majority and the small number of schools where affluent parents cluster.”⁵²

And this clustering points to perhaps the most far-reaching effect of the gap in personal financial capital on schooling and, by extension, the enrichment opportunities that are connected with those schools. Summing up the research, scholar Daniel Willingham [explains](#) that, “wealthier families often seek housing in what they believe to be superior school districts.”⁵³ Thus, more affluent students not only live near (or have ready access to) schools and other places that offer enrichment programming, they also have the financial wherewithal to participate in those activities. Poorer students tend to have much less access to these types of opportunities, so the resulting phenomenon has become known as the “opportunity gap.” That an opportunity gap in overall enrichment available exists between students of different socioeconomic background also puts more pressure on schools serving lower-income neighborhoods to narrow that disparity through in-school programming.

The case of arts education offers some of the strongest evidence of both its potential impact and, at the same time, its declining place in the lives of young people, especially poorer children. To begin, [surveys](#) conducted by the National Endowment for the Arts reveal that young people’s participation in some form of arts education has declined markedly over the last three decades. The drop is steepest among people considered most at-risk (as measured by parental education).⁵⁴

This trend continues despite the fact that, separate and apart from research drawing correlations between arts participation and performance in school, [many researchers](#) suggest that the value of the arts is broad and consequential.⁵⁵ A focus on arts education helps to promote underlying attributes associated with being well-prepared for life, such as creativity, persistence, and the ability to communicate and collaborate.⁵⁶ Some examples:

- ◆ A [study](#) of more than 2,000 middle-school students by researchers at Columbia University, for example, found that students who had participated in at least three years of in-school arts instruction scored significantly higher on an instrument measuring creative thinking and that these students self-reported much higher rates of positive attitudes towards school and learning than did their peers who had experienced less arts education.⁵⁷
- ◆ A smaller-scale [evaluation](#) of a six-month program

that involved youth in drama reported that these participants demonstrated less aggressive and violent tendencies, while also exhibiting more pro-social behaviors like cooperation and self control.⁵⁸

- ◆ Scholars from Project Zero, an arts education research group at the Harvard Graduate School of Education, have [written about](#) the development of “studio habits” within high-quality classes. These habits have the potential to bring together concepts in students’ minds that effort, revision and hard work can produce excellence.⁵⁹

Arts educators (and artists, for that matter) also insist that participation in the arts is as much about their intrinsic value—stimulating a depth of emotion that few other activities can—as it is about the transferrable skills that artistic endeavors promote.⁶⁰ RAND researchers, for instance, describe the arts as a “communicative experience” with the ability to “stimulate curiosity, questioning, and the search for explanation,” even as they acknowledge that such effects are nearly impossible to measure.⁶¹

A similar concept of needing to look beyond narrow academic benefits relates also physical education classes, which have also lost weekly minutes in school, despite the fact that

there are some concrete metrics through which to demonstrate their value. For starters, [a growing field of research](#) suggests that greater participation in physical education classes in

The opportunity gap in enrichment between students of different socioeconomic backgrounds puts more pressure on schools serving lower-income neighborhoods to narrow that disparity through in-school programming.

school yield a number of physiological benefits, including increased coordination, skeletal strength, and accelerated metabolism, which, in turn, might help ameliorate the skyrocketing incidence of childhood obesity.⁶² And the potential advantages of more physical education opportunities do not stop with improvements to the body. Research on brain structure and function suggests that regular physical activity might also stimulate physiological change to the brain that will, in turn, promote cognitive growth. Eric Jensen [explains](#) in *Teaching with the Brain in Mind* that the cerebellum, which controls physical movement, also regulates neuron activity to and from the cerebral cortex.⁶³ Many studies have revealed that invigorating the cerebellum through physical exercise can then influence brain capacity to [pay attention in class](#), engage in higher-order thinking, and hone memory, spatial perception, and decision making.⁶⁴

There are other facets of the school experience that, though less structured, also can be vital to children’s

growth and development. The classic field trip, which has declined in frequency over the last few years, is a prime example. [An evaluation](#) of half-day school visits to a new art museum in Arkansas, for example, found that students demonstrated significantly greater critical thinking skills—like observation and empathy—than a control group that had not attended. Poorer and more rural students demonstrated particularly strong gains.⁶⁵

The most common unstructured time during the school day is recess, a period that has been vulnerable to reductions as educators consider how to wedge more time for academic pursuits into the day. This tendency to cut comes despite [research that shows](#) that recess can contribute to the [healthy development](#) of children across a number of domains, including increasing physical activity, spurring brain development, lowering obesity, and encouraging social development through game playing and negotiating relationships through unstructured activities.⁶⁶ [One experiment suggests](#) that recess can even affect the amount of time that students focus on learning when they return to class. Comparing two fourth-grade classes, researchers observed student behavior in these classes on randomly chosen days when a recess period was given for 20 minutes. On those days when students had recess, they were observed to fidget less and pay greater attention in class.⁶⁷

When it comes to these broader learning and growth opportunities, the fundamental question is whether schools have the flexibility and resources to provide them. As noted, in an era of increasing demands in academic standards, but no corresponding increase in the resource of time, the activities and classes associated with a well-rounded education get squeezed out. Evidence suggests that schools with more time are less likely to face this harsh choice, however. NCTL's *Time Well Spent* documents that in the 30 highly-effective schools profiled—schools which averaged 1,467 hours per year—students have about an hour per day for enrichments. And these schools are no exception. According to data from the U.S. Department of Education's (USED's) Schools and Staffing Survey (SASS), schools with more time overall also provide their students with significantly more time in art, foreign language and physical education.⁶⁸

Further, schools that have added substantially more time to the school day, like the ELT schools in Massachusetts or schools profiled in *Time Well Spent*, report integrating a much broader range of learning opportunities than the more traditional enrichments of physical education and art. In part through partnerships with community-based organizations and in part by drawing upon in-school resources, these schools offer their students the opportunity to participate in apprenticeships; specialized science classes like robotics, astronomy, and meteorology; cooking; performing arts like drama and dance; and alternative exercise like karate and yoga.⁶⁸

School Time and the National Future

Americans have ambitious goals for the nation's educational system. We want nothing less than to enable the next generation to compete successfully in the global economy and to live rich, fulfilling lives. Yet, many signs indicate that this aspiration is under serious threat. A startling [study](#) from the consulting firm McKinsey & Company revealed that failing to provide a first-rate education to all students and, by implication, allowing socioeconomic achievement gaps to persist, "imposes on the United States the economic equivalent of a permanent national recession."

But the report's authors also found reason for hope. As they wrote, "the wide variation in performance among schools and school systems serving similar students suggests that the opportunity and output gaps related to today's achievement gap can be substantially closed."⁷⁰ In other words, if some schools can successfully educate at-risk students, there's no reason many more schools cannot do the same.

Certainly, myriad factors account for the ability of schools to be effective in promoting learning and at closing achievement gaps, but, as this review has described, a preponderance of evidence points to the powerful association between more time in school (both generally and spent in specific activities) and better outcomes for students, especially for those who otherwise lack productive learning outside school. From increased breadth and depth of academic content, through greater exposure to the arts and other enrichments that deepen engagement and broaden skills, to dedicated sessions for teachers to collaborate on improved instruction, a longer school day and year translate to expanded opportunities for learning and growth.

If some schools can successfully educate at-risk students, there's no reason many more schools cannot do the same.

While having more opportunities does not automatically guarantee higher proficiency and better-developed skills among students from all backgrounds, without expanding learning time, there seems to be a much smaller chance of achieving such results. As Richard Barth, CEO and President of the KIPP Foundation, has asserted: "When you look at the public schools that are fundamentally changing the trajectory of students' lives in high-poverty communities, the overwhelming majority offer expanded learning time in school."⁷¹

Notes:

¹ National Education Commission on Time and Learning, *Prisoners of Time* (Washington, DC: U.S. Department of Education, 1994).

² Source paper to be published. School Time...

³ Source paper to be published. Mapping School Time

⁴ Will Dobbie and Roland G. Fryer, Jr., "Getting Beneath the Veil of Effective Schools: Evidence from New York City," NBER Working Paper, No. 17632, December 2011. On the number of hours, Dobbie and Fryer found that high-achieving elementary schools provide about 26.6 percent more instructional hours per year than typical NYC schools, while high-achieving middle schools provide about 28.1 percent more. Non-high-achieving charter schools, on the other hand, provide just 11.4 and 21.4 percent more instructional time at the elementary and middle school levels, respectively. (The typical high-achieving elementary school has 190.67 instructional days and an instructional day of 8.1 hours, compared to 183.8 instructional days and 7.4 instructional hours at other charter schools. The typical high-achieving middle school meets for 191.0 instructional days, with a typical instructional day lasting 8.2 hours. Other charter middle schools in the sample meet for only 187.1 instructional days with an average day of 7.9 hours.)

⁵ Caroline Hoxby and Sonali Murarka, "New York City Charter Schools: How Well are They Teaching Their Students?," *Education Next*, Summer 2008: pp. 54-61.

⁶ Atila Abdulkadiroglu, et al, *Informing the Debate: Comparing Boston's Charter, Pilot and Traditional Schools*. (Boston, MA: The Boston Foundation, 2009); Susan Bowles Therriault, et al, *Out of the Debate and into the Schools; Comparing Practices and Strategies in Traditional, Pilot and Charter Schools in the City of Boston* (Boston, MA: American Institutes for Research, 2010).

⁷ William Dobbie and Roland G. Fryer, Jr., "Are High-quality Schools Enough to Close the Achievement Gap? Evidence from a Bold Social Experiment in Harlem," NBER Working Paper, No. 17632, November 2009. For additional research that suggests how time plays a functionally significant role in the organization of a high-quality school see Katherine Merseth, et al, *Inside Urban Charter Schools: Promising Practices and Strategies in Five High-performing Schools* (Cambridge, MA: Harvard University Press, 2009) and Karin Chenoweth, *It's Being Done: Academic Success in Unexpected Schools* (Cambridge, MA: Harvard University, 2007).

⁸ Erika A. Patall, Harris Cooper and Ashley Batts Allen, "Extending the School Day or School Year: A Systematic Review of Research (1985 - 2009)," *Review of Educational Research*, 80:3 (September 2010), pp. 401 - 436. In addition to this investigation of schools in the United States, another scholar examined schools in Israel, after a revised funding formula prompted a large number of them to expand school time significantly. He found that the more a school had increased instructional time in a particular subject, the better students' performance in that subject. (Victor Lavy, "Expanding School Resources and Increasing Time on Task: Effects of a Policy Experiment in Israel on Student Academic Achievement and Behavior," NBER Working Paper No. 18369, September

2012.)

⁹ Harris M. Cooper, et al, "The Effects of Summer Vacation on Student Achievement Test Scores: A Meta-analytic and Narrative Review," *Review of Educational Research*, 66:2 (1996), pp. 227-268. For a full summary of the research related to summer learning loss, see Beth Miller, *The Learning Season: The Untapped Power of Summer to Advance Student Achievement* (Quincy, MA: Nellie Mae Education Foundation, 2009).

¹⁰ Karl L. Alexander, Doris R. Entwisle, Linda S. Olson, "Schools, Achievement, and Inequality: A Seasonal Perspective," *Educational Evaluation and Policy Analysis*, 23:2 (Summer, 2001), pp. 171-191.

¹¹ Douglas Downey, Thomas von Hippel, Beckett Broh, "Are Schools the Great Equalizer? Cognitive Inequality during the Summer Months and the School Year," *American Sociological Review*, 69:5 (October 2004), pp. 613-635. Malcolm Gladwell, summarizing the research, states plainly in his book, *Outliers*, "Schools work. The only problem with school, for the kids who aren't achieving, is that there isn't enough of it." [Malcolm Gladwell, *Outliers: The Story of Success* (New York: Little Brown, 2008), p. 259.]

¹² James Carroll, "A Model of School Learning," *Teachers College Record*, 64:1 (1963), pp. 723-733.

¹³ Dennis Coates, "Education Production Functions Using Instructional Time as an Input," *Education Economics*, 11:3 (December 2003), pp. 273-292.

¹⁴ B.M. Taylor, B.J. Frye, and G. M. Maruyama, "Time Spent Reading and Reading Growth," *American Educational Research Journal*, 27:2 (1990), pp. 351-362.

¹⁵ Maribeth Gettinger, "Individual Differences in Time Needed for Learning," *Educational Psychologist*, 19:1 (1984), pp. 15-29; Gettinger, "Time Allocated and Time Spent Relative to Time Needed for Learning as Determinants of Achievement," *Journal of Educational Psychology*, 77:1 (1985), pp. 3-11; and Gettinger, "Effects of Maximizing Time Spent and Minimizing Time Needed for Learning on Pupil Achievement," *American Educational Research Journal*, 26:1 (Spring 1989), pp. 73-91.

¹⁶ Charles Fisher and David Berliner, *Teaching and Learning in the Elementary School: A Summary of the Beginning Teacher Evaluation Study* (San Francisco, CA: Far West Lab for Educational Research and Development, 1978).

¹⁷ R.A. Rossmiller, *Resource Utilization in Schools and Classrooms: Final Report* (Program Report 86-7) (Madison, WI: University of Wisconsin Center for Education Research, 1986).

¹⁸ Judith Florian, *Teacher Survey of Standards-based Instruction: Addressing Time* (Aurora, CO: Mid-Continent Research for Education and Learning, 1999). The average school year can be derived from the 2011 SASS data as 1,217 hours—that is, 179 6.8-hour days—but this total also includes time for lunch, transitions, and other activities that cannot be counted toward actual learning time. Moreover, the rough calculation does not account for half-days and other regular interruptions to the learning day like testing. When those deductions are taken into account the result is closer to 5 hours per day

of actual learning or 900 total annual hours.

¹⁹ For a comparison of Common Core to current state standards, see Sheila Byrd Carmichael, et al, *The State of State Standards—and the Common Core—in 2010* (Washington: Fordham Institute, 2010). For details on the learning time implications of the Common Core requirements both in the classroom and for teacher preparation during the transition to the new standards, see David A. Farbman, David J. Goldberg and Tiffany Miller, *Redesigning and Expanding School Time to Support Common Core Implementation* (Washington, DC: Center for American Progress, 2014). For example, the education standards group, Achieve, has already expressed its view that “Teachers will likely need more instructional time in order to teach more rigorous, higher-level content in more depth and to integrate literacy skills into their lessons.” (*Implementing the Common Core State Standards: The Role of the Elementary School Leader* (Washington, DC: Achieve, Inc., February 2013), p. 20.) For more information on the details of how the new standards will impact time usage in the classroom see *Seeing the Future: How the Common Core Will Affect Mathematics and English Language Arts in Grades 3-12 Across America* (Princeton, NJ: The Center for K-12 Assessment & Performance Management at Educational Testing Service, May 2013)..

²⁰ For comparison of Massachusetts learning standards to CCSS, see WestEd, *Analysis of the Commonwealth of Massachusetts State Standards and the Common Core State Standards for English Language Arts and Mathematics*, Study Prepared for the Massachusetts Business Alliance for Education, July 2010. For survey results, see Massachusetts Teaching, Learning, and Leading Survey (MassTeLLS), 2012.

²¹ Amy Checkoway, et al, *Evaluation of the Expanded Learning Time Initiative Year Four Integrated Report: 2009-10* (Cambridge, MA: Abt Associates, March 2011), p. 53.

²² Massachusetts 2020, *Kuss Middle School: Expanding Time to Accelerate School Improvement* (Boston: Author, 2009), p. 4.

²³ Claire Kaplan and Roy Chan, *Time Well Spent: Eight Powerful Practices of Successful, Expanded-Time Schools* (Boston, MA: National Center on Time & Learning, 2011), pp. 4-5.

²⁴ Merseth, et al, *Inside Urban Charter Schools*, pp. 179-82.

²⁵ John Rogers and Nicole Mirra, *It's About Time: Learning Time and Educational Opportunity in California High Schools* (Los Angeles: UCLA IDEA, 2014).

²⁶ See, for example, James H. Stronge, *Effective Teachers=Student Achievement: What the Research Says* (Larchmont, NY: Eye on Education, 2010).

²⁷ Patall, et al., p. 430.

²⁸ Two sets of research suggest how time metrics may be a helpful prism through which to view teacher quality. The first relates to how managing time in very subtle ways—and, more specifically, the way in which teachers structure classroom discussion—can have an impact. Studies of classroom interactions between teachers and students that examine deliberate or expected pauses in conversation—either to allow for questions from students or responses to questions from teachers, known in the research as “wait time”—have shown an effect on learning. Especially in math and science classes,

teachers’ wait time of three to five seconds (as opposed to shorter wait times) has been associated with an increased cognitive depth. On the one hand, if teachers paused a few seconds before posing questions, the questions themselves were more likely to be better focused on querying students’ understanding rather than their mere recall. On the other, students’ responses tended to be lengthier and more complex, if the teacher waited a few moments before calling on a particular student to answer. [Kenneth Tobin, “The Role of Wait Time in Higher Cognitive Level Learning,” *Review of Educational Research*, 57:1 (Spring, 1987), pp. 69-95.]

Teacher quality also relates to how teachers motivate students to learn. Keep in mind that when it comes to maximizing productive learning time, the ultimate arbiter of how much time any given student commits to learning is the student him or herself. Each student must decide to what degree s/he will persevere and dedicate his/her own mind to grasping new concepts and practicing skills. There is no single piece of evidence indicating with any precision to what degree teachers can influence student motivation, but several researchers have found that various techniques, including using extrinsic rewards sparingly, supporting students consistently, and promoting mastery learning, can enhance student attention and engagement. [For various research on teachers’ role in enhancing student motivation, see Sandra Brooks, Susan Freiburger and Debra Grotheer, *Improving Elementary Student Engagement in the Learning Process through Integrated Thematic Instruction*. (Unpublished master’s thesis, Chicago, IL: Saint Xavier University); L. Anderman and Carol Midgley, “Motivation and Middle School Students” (ERIC digest, 1998). Champaign, IL: ERIC Clearinghouse on Elementary and Early Childhood Education; Linda Lumsden, *Student Motivation to Learn* (ERIC Digest No. 92), 1994, (Eugene, OR: ERIC Clearinghouse on Educational Management); and Ellen Skinner and Michael Belmont, *A Longitudinal Study of Motivation in School: Reciprocal Effects of Teacher Behavior and Student Engagement Unpublished manuscript*, (Rochester, NY: University of Rochester, 1991).]

²⁹ Steven G. Rivkin and Jeffrey C. Schiman, “Instruction Time, Classroom Quality, and Academic Achievement,” NBER Working Paper No. 19464, September 2013. This phenomenon might help explain, too, why an analysis of schools in Mexico generally found little effect of adding days to the school year, especially in poorer schools. As the authors note, “in order to increase student performance in math and reading broader policies that raise several inputs of the school production are needed, as opposed to single isolated policies.” [See Jorge M. Aguero and Trinidad Beleche, “Test-Mex: Estimating the Effects of School Year Length on Student Performance in Mexico,” *Journal of Development Economics*, 103:C (2013), pp. 353-361.] An evaluation of KIPP middle schools demonstrates that such variation is evident within a smaller set of schools, as well, even when all among them have significantly more time than is typical in the United States. Although most KIPP schools included in this evaluation saw significantly higher math scores among their students (as compared to peers in the respective local districts), the outcomes were not equally strong across the schools. In fact, 7 KIPP schools were able to advance scores in math only modestly—though still outperforming their district peers—while 11 schools posted more impressive

gains. The point is not to dismiss the positive effects that more time can bring, but merely to indicate that even among a highly-coordinated network of schools, variation in results is to be expected. Over the long-term, some schools generate stronger gains than others because variation in instructional quality and in the use of time at its most granular level is unavoidable. [Christina Clark Tuttle, et al, *Student Characteristics and Achievement in 22 KIPP Middle Schools* (Washington, DC: Mathematica Policy, June 2010).]

³⁰ Linda Darling Hammond, et al, *Professional Learning in the Learning Profession: A Status Report on Teacher Development in the United States and Abroad*, (Dallas, TX: National Staff Development Council, 2009), p. 7.

³¹ Eric M. Camburn, "Embedded Teacher Learning Opportunities as a Site: An Exploratory Study," *American Journal of Education*, 116:4 (August 2010), pp. 463-89.

³² Fred M. Newmann and Gary G. Wehlage, *Successful School Restructuring: A Report to the Public and Educators* (Washington, DC: American Federation of Teachers, 1995).

³³ Richard DuFour, "What is a Professional Learning Community?" *Education Leadership*, 61:8 (May 2004), p. 10. Emphasis added.

³⁴ Karen Seashore Louis, et al, "Professional Community in Restructuring Schools" *American Education Research Journal*, 33:4 (Winter 1996), pp. 757-798.

³⁵ Kwang Suk Yoon, et al, *Reviewing the Evidence on How Teacher Professional Development Affects Student Achievement* (Washington: Institute for Educational Sciences, U.S. Department of Education, 2007). Study authors calculated the effect of professional development on student learning using formulas of the What Works Clearinghouse. Specifically, authors calculated improvement by comparing the effect sizes (i.e., change in achievement) of the group of students who had teachers with the intervention to a group with teachers who lacked the intervention. The difference between these two effect sizes is called the "improvement index." Authors then averaged the improvement index across the nine studies to determine a 21 percentile gain in achievement.

³⁶ Darling Hammond, et al, *Professional Learning in the Learning Profession*, p. 9-11.

³⁷ Organisation for Economic Co-operation and Development, *Education at a Glance 2013: OECD Indicators* (Paris: Author, 2011), Table D 4.1. U.S. teachers spend approximately 80 percent of their time in instruction, while the international average for countries reporting data is 67 percent.

³⁸ National Center for Literacy Education, *Remodeling Literacy Learning: Making Room for What Works* (Urbana, IL: Author, April 2013).

³⁹ *Primary Sources: America's Teachers on the Teaching Profession* (New York: Scholastic, 2012), p. 132.

⁴⁰ See the NCTQ database, TR3, at <http://www.nctq.org/tr3/search.jsp>.

⁴¹ See Checkoway, et al, *Evaluation of the Expanded Learning Time Initiative*.

⁴² Kaplan, et al, *Time for Teachers: Leveraging Expanded Time*

to Strengthen Instruction and Empower Teachers (Boston, Mass.: National Center on Time and Learning, 2014), p.6.

⁴³ *The MetLife Survey of the American Teacher*, 2010, p. 21.

⁴⁴ Editorial Projects in Education Research Center, *Findings from a National Survey of Teacher Perspectives on the Common Core* (Bethesda, MD: Author, February 2013), p. 20.

⁴⁵ Kaplan, et al, *Time for Teachers*: p.52.

⁴⁶ *Phi Delta Kappan* survey 2013, p. 18. See also: "Key Findings On Attitudes Toward Education and Learning," (Washington, DC: Peter D. Hart Research Associates, May 2008).

⁴⁷ Jennifer McMurre, *Instructional Time in Elementary Schools: A Closer Look at Changes for Specific Subjects* (Washington, DC: Center on Education Policy, February 2008). Meanwhile, data culled from the 2007-2008 U.S. Department of Education's Schools and Staffing Survey indicate that schools with expanded time (a longer day and/or year) allot more time than traditional-schedule schools (at statistically significant levels) to science, social studies, phys. ed., and music. See Tammy Kolbe, Mark Partridge and Fran O'Reilly, *Time and Learning in Schools: A National Profile* (Boston, MA: National Center on Time and Learning and Storrs, CT: Center for Education Policy Analysis, March 2011), p. 24.

⁴⁸ Government Accountability Office, *Access to Arts Education: Inclusion of Additional Questions in Education's Planned Research Would Help Explain Why Instruction Time Has Decreased for Some Students* (Washington, DC: Author, 2009).

⁴⁹ Vivien Yee, "Arts education lacking in low-income areas of New York City, report says," *New York Times*, 7 April 2014.

⁵⁰ Over 33 years (1983 to 2006), spending on extracurriculars among families in the bottom income quintile rose from \$1,264 to \$1,315 (in 2008 dollars), while spending among the top-quintile families rose from \$5,650 to \$8,872. See Robert Putnam, "Requiem for the American Dream?: Unequal Opportunity in America" Lecture at *Aspen Ideas Festival*, Aspen, CO, 29 June 2012.

⁵¹ Valerie Honeycutt Spears, "Rich schools/poor schools: Activity funds show growing divide among Fayette County schools," *Kentucky.com*, 12 July 2014.

⁵² Jeremy Adam Smith, "How Budget Cuts and PTA Fund-raising Undermined Equity in San Francisco Public Schools," *San Francisco Public Press*, 3 February 2014.

⁵³ Daniel T. Willingham, "Why Does Family Wealth Affect Learning?" *American Educator*, Spring 2012, pp. 33-38.

⁵⁴ Data reported in Nick Rabkin and E. C. Hedberg, *Arts Education in America: What the Declines Mean for Arts Participation* (National Endowment for the Arts, February 2011), p. 47.

⁵⁵ The [most notable work](#) in unearthing these correlations has been carried out by James Catterall and his colleagues who, using large national data sets, found "significant and substantial" associations between grades and scores on standardized assessments and the level of participation in arts programming, both in school and out. [James Catterall, Richard Chapleau and John Iwanaga, "Involvement in the Arts and Human Development: General Involvement and Intensive Involvement in Music and Theater Arts," in Edward Fiske,

ed. *Champions of Change: The Impact of the Arts on Learning* (Washington, DC: President's Committee on the Arts and Humanities, 1999).] See also: James Catterall, *The Arts and Achievement in At-Risk Youth: Findings from Four Longitudinal Studies*, Research Report #55 (Washington, DC: National Endowment for the Arts, March 2012). Take note that there is no causation indicated. It is possible that unrelated factors, such as personality type or other school structures, might account for this association of high-arts participation with better academic performance.

⁵⁶ For a thorough analysis of the findings and limitations of arts education research, see Kevin F. McCarthy, Elizabeth H. Dondaatje, Laura Zakaras, and Arthur Brooks, *Gifts of the Muse: Reframing the Debate About the Benefits of the Arts* (Santa Monica, CA: the RAND Corporation, 2004). Other sources adopting this perspective include: Elliot W. Eisner, *Arts and the Creation of Mind* (New Haven, CT: Yale University Press, 2002) and Richard J. Deasy, ed. *Critical Links: Learning in the Arts and Student Academic and Social Development* (Washington, DC: Arts Education Partnership, 2002), a compendium of studies that examine the wide range of effects that arts programming (music, dance, drama and visual arts) can have on students' cognitive development and their creative thinking skills.

⁵⁷ Judith Burton, Robert Horowitz and Hal Abeles, "Learning In and Through the Arts: Curriculum Implications," in Fiske, ed. *Champions of Change*.

⁵⁸ Cassandra Kisiel, et al, "Evaluation of a Theater-based Youth Violence Prevention Program for Elementary School Children," *Journal of School Violence*, 5:2 (2006), pp. 19-36. See also: M. Gervais, "Exploring Moral Values with Young Adolescents through Process Drama," *International Journal of Education & the Arts*, 7:2 (2006).

⁵⁹ Lois Hetland, et al, *Studio Thinking: The Real Benefits of Visual Arts Education* (New York: Teachers College Press, 2007).

⁶⁰ See, for example, Elliot Eisner, *The Arts and the Creation of Mind*, (New Haven, CT: Yale University Press, 2002).

⁶¹ *Gifts of the Muse*, pp.40-42.

⁶² Oded Bar-or, "Health Benefits of Physical Activity during Childhood and Adolescence," *Fitness Research Digest*, 2:4 (1995), pp. 1-8.

⁶³ Eric Jensen, *Teaching with the Brain in Mind* (Alexandria, VA: Association for Supervision and Curriculum Development, 1998).

⁶⁴ "Physical Activity May Strengthen Children's Ability To Pay Attention" *Science Daily*, 1 April 2011 and W. H. Calvin, *How Brains Think: Evolving Intelligence, Then and Now* (New York: Basic Books, 1996).

⁶⁵ Jay P. Greene, Brian Kisida, and Daniel H. Bowen, "The Educational Value of Field Trips," *Education Next*, Winter 2014, pp. 78-86.

⁶⁶ Sandra Waite-Stupiansky, "The Fourth R: Recess and its Link to Learning," *Educational Forum*, 2001, 66:1 (2001), pp. 16-25; Anthony Pellegrini and Peter Smith, "School Recess: Implications for Education and Development," *Review of Educational Research*, 63:1 (Spring 1993), pp. 51-67; Pel-

legrini, et al, "The Effects of Recess Timing on Children's Playground and Classroom Behaviors," *American Educational Research Journal*, 32:4 (Winter 1995), pp. 845-864.

⁶⁷ Olga Jarrett, et al, "The Impact of Recess on Classroom Behavior: Group Effects and Individual Differences," *Journal of Educational Research*, 92:2 (November/December 1998), pp. 121-126.

⁶⁸ Kolbe, Partridge and O'Reilly, *Time and Learning in Schools*, p. 24.

⁶⁹ For samples of these types of activities, see Kaplan and Chan, *Time Well Spent*, pp. 46-53 and Checkoway, et al, *Evaluation of the Expanded Learning Time Initiative*, p. 65-73

⁷⁰ McKinsey & Company, *The Economic Impact of the Achievement Gap in America's Schools* (New York: Author, 2009), p. 6.

⁷¹ Richard Barth, "Innovations at Work: The Power of Expanded Learning to Increase Student Achievement," Remarks at Congressional Briefing, Washington, D.C., 1 February 2011.