

# A REVIEW OF RESEARCH ON EXTENDED LEARNING TIME IN K-12 SCHOOLS

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## INTRODUCTION

**T**IME IS ONE OF MANY RESOURCES managed by schools for the purpose of educating children. Other resources include staff, curriculum, teacher training and development, facilities, and transportation. Like all scarce resources, policymakers must consider carefully how best to allocate time to achieve the greatest benefit for the least cost, and how best to allocate scarce dollars among time and all of the other resources that are essential to effective educational programs.

Time in school is measured in two important dimensions. First is the amount of time students spend at school. With the exception of Kindergarten, this is typically 6.5 hours per day, 180 days per year, and between 720 and 1086 instructional hours (depending on the state and grade level) in the United States. Second, and no less important, is the way that allocated time is used. States, districts and schools vary widely in how and how well they use the time available to them.

Extended learning time has emerged as a promising policy option over the last several decades, with greater interest in recent years among such organizations as Massachusetts 2020, the Center for American Progress, the Harvard Family Research Project and others. Extended learning time is defined by the Center for American Progress as “The lengthening of the school day, school week or school year for all students in a given school... to focus on core academic learning *and* enrichment activities to enhance student success.”<sup>1</sup> Some define it more broadly to include any programmed time involving students, including out-of-school time and extended time that targets specific populations rather than the entire school.

Extended learning time can take several forms. Schools can add time to existing school days or add days to the school year. Schools and/or other providers can offer after-school programs and summer school sessions. Other policy options explored in the literature include optimizing the current time spent in school rather than adding time, and modifying the traditional school calendar to reduce the long summer break when some students



suffer learning losses. Each of these options has benefits and drawbacks, and certain pre-conditions for success.

Many education researchers, policy analysts and program evaluators have investigated extended learning time over the past several decades, and have put forward theories about the value (or lack of value) of extended learning time based mostly on quasi-experimental or non-experimental studies and anecdotal evidence. Due to a number of practical constraints, to date few high-quality longitudinal and/or randomized studies have been conducted to determine the actual impact of such programs. However, some themes and lessons emerge consistently throughout the literature, and those will be summarized in this report.

In brief, the literature on extended learning time suggests the following:

- Time is necessary, but not sufficient for producing learning outcomes. The connection between time and learning is not straightforward, and depends on how effectively learning time is being used. Additional learning time is effective only when existing learning time is being optimized.
- Extended learning time is more effective for disadvantaged children than for children from middle or high socio-economic status households.
- Extended learning time programs have been more effective in primary and secondary grades than in middle school.
- Extending the school day is more cost-effective than extending the school year.
- Successful extended learning time programs have been shown to have at least these five characteristics in common:
  - ♦ They have bold leadership
  - ♦ They involve teacher commitment and leadership
  - ♦ They are evidence-based and data-driven
  - ♦ They engage the support of parents, partners and the community
  - ♦ They are focused on core academics and enrichment activities that are aligned with other goals and reforms

These key questions must be addressed by schools or districts considering extended learning time as a means of increasing student achievement:

- Who should receive extended learning time?
- How will the extended time be used?
- What are the specific outcome goals of the extended learning time program, and how will those outcomes be measured?
- What evidence-based practices align with the needs of the specific population being served and the stated goals of the program?
- How will support for the program be generated and maintained among all stakeholders?
- How will the program be structured, staffed and financed?
- Is this the most effective use of these resources?

## Time and Learning

The traditional school year has been called a relic of the agrarian age of past centuries, when children were needed at home in the afternoons and during the summer to work, and education was not the economic necessity it is today. In 1983, the National Commission on Excellence in Education issued a report titled “A Nation at Risk,” calling for an end to the traditional 6.5 hour day, 180 day school year. It recommended increasing the number of hours in the school day to seven, and increasing the number of school days in the year to between 200 and 220. In the 25 years since that report was issued, those recommendations have been adopted only in Massachusetts, and then only in the form of a voluntary pilot program. Similarly, the Center

for American Progress and Massachusetts 2020 have called for increasing the school day by 30 percent, which equals about 360 hours or about two hours per day.

As of the 2007-08 school year, thirty states require a minimum number of 180 days in school, and eleven require between 160 and

179. Other states, including Oregon, require a minimum number of hours. For states that set minimum instructional hours, Table 1 shows the minimum hours required by grade level. It is important to note that states have different, and often contradictory, lists of what is included in or excluded from “instructional hours.” In Oregon, transportation, passing time, recess and lunch are excluded, but assemblies, orientations, testing and parent-teacher conferences are included. As an example of the variation, some states include recess in instructional time while others exclude conferences.

Within Oregon, some school districts set attendance requirements above the mandated minimum. Oregon school districts typically require somewhere between the minimum (currently 405 hours for half-day Kindergarten up to 990 hours for secondary grades) and about 1,200 hours of instruction per year.

The number of hours and days children attend school in the United States is frequently compared to other developed countries and found lacking, presumably leading to lower academic achievement and a competitive

*Table 1. Number of Instructional Hours Required by States, 2008*

GRADE	Kindergarten													
	Half-Day	Full-Day	1	2	3	4	5	6	7	8	9	10	11	12
Colorado	450	900	900				1080							
Connecticut	450		900											
Delaware	440		1060											1032
Idaho	450		810			900				990				
Kansas	465		1116											1086
Michigan			1080											
Missouri			1044											
Montana	360	720	720			1080								
Nebraska	400		1032											1080
New Hampshire			945							990				
New Mexico	450	990	990					1080						
North Carolina			1000											
Oregon	405		810			900				990				
Pennsylvania	450		900											990
South Dakota	438		N/A				962.5							
Utah	450		810	990										
Virginia	450		990											
Washington	450		1000											
Wisconsin	437		1050						1137					

Source: Education Commission of the States

disadvantage globally. According to the Programme for International Student Assessment (PISA), the United States ranked 8<sup>th</sup> in total instructional time for 10<sup>th</sup> grade students in 2000, behind Mexico, Austria, Liechtenstein, Italy, The Netherlands, France and Japan in that order.<sup>2</sup> However, a 2004 cross-national study based on several achievement tests and grade levels found no significant relationship between instructional time and national achievement test scores.<sup>3</sup> Clearly, cross-national comparisons of learning time must be made with care.

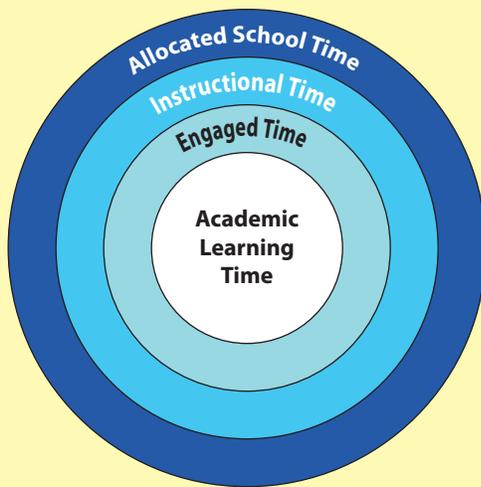
### How Time Is Used in School

The relationship between time and learning is not straightforward. Research has demonstrated that simply adding more time to the school schedule does not translate directly to higher academic achievement. The effect of additional time depends upon how that time is used.

Several researchers have described school time as being comprised of different types of time.<sup>4,5</sup> The first type, “allocated time,” includes the total amount of time that students are scheduled to be in school, currently about 6.5 hours per

day, 180 days per year. Of that time, only a portion is dedicated to “allocated class time” when students are present in their classrooms. Furthermore, of allocated class time, only a portion is devoted to “instructional time.” And finally, only a portion of instructional time results in “academic learning time.” Academic learning time is defined as “that precise period when an instructional activity is perfectly aligned with a student’s readiness and learning occurs.”<sup>6</sup> Figure 1 shows the relationship between the types of time in school.

*Figure 1: How time is used in schools*



Scheduled uses of non-academic-learning time throughout the day include roll call, testing, lunch, recess, passing time, announcements, assemblies, etc. Inappropriate curriculum or instruction methods, poor classroom management, student inattention or absence and discipline issues can further erode academic learning time. A 2007 performance audit of Portland Public Schools reported on national research showing wide variation in the proportion of allocated instructional time that is actually used for instruction, ranging from a low of 21 percent to a high of 69 percent.<sup>7</sup>

In general, research has shown a strong positive relationship between the amount of “academic learning time” and student achievement, a weak relationship between “engaged time”

and achievement, but no relationship between “allocated time” and student achievement<sup>8,9</sup>. The important point is that while time in school is necessary for learning, time alone is not sufficient. Additional time must result in academic learning time if it is to be effective. In schools where the existing schedule has been optimized to allow for the maximum amount of academic learning time, additional time is likely to have an impact on student achievement. However, in schools where existing time is not well utilized, adding time to the day or year likely will be ineffective, and a poor use of scarce resources.

For this reason many researchers have recommended that efforts to increase time in school should first be directed at maximizing the amount of academic learning time in the existing school day and year. Strategies such as improving teacher training, improving and aligning the curriculum, reducing distractions, year-round schedules and block scheduling have been shown to help increase the amount of academic learning time.

## Summer Learning Loss

An area of particular concern to researchers has been the learning loss that can occur over the long summer break. Several studies have shown that summer vacation has a disproportionately negative impact on learning for students from lower socio-economic backgrounds, and to make matters worse, this impact may be cumulative. While all children tend to lose math skills over the summer, children from lower socio-economic levels lose the equivalent of one month of reading instruction during the summer months, while children from middle and upper socio-economic levels are able to maintain and often improve their reading skills<sup>10,11</sup>

The unequal impact of summer break generally is attributed to the fact that advantaged students have greater access to summer learning and enrichment opportunities, such as access to

books and encouragement to read, summer camps and classes, and cultural outings, than their less advantaged peers.<sup>12,13</sup> Many existing summer programs for disadvantaged students aim to prevent summer learning losses.

## What Is Extended Learning Time?

Extended learning time can take a variety of forms, but generally falls into one of two categories: 1) programs that add hours or days to the regular school schedule using existing staff and facilities; and, 2) out-of-school programs (after-school or summer school) that are operated separately from the regular school day or year.

Out-of-school programs can be operated either by regular school staff or separate program staff; they can be aligned with the regular school curriculum or stand alone; they can be run by the school district, by not-for-profit or for-profit organizations, or by partnerships between these groups; and they can be located within schools or at facilities throughout the community. Below are descriptions of the most common types of extended-learning time programs.

*Extended-Day Programs* are part of the normal school day, adding between a half-hour and two hours of school time. Schools can use this time to lengthen regular classes, or they can add specific programs such as academic or enrichment activities, electives, tutoring, and career experiences. Some schools have built in extra teacher planning time to extended schedules. These programs typically utilize existing staff whose contracts have been adjusted for their extra time, although they may supplement with extra professional or para-professional staff. Massachusetts has been experimenting with extended days in their Massachusetts 2020 initiative, and currently has 18 schools that have voluntarily switched to extended days.<sup>14</sup>

*Extended-Year Programs* add days to the regular school year, offering an extension of the same curriculum. Adding days to the school year is an expensive option, given the high fixed cost of operating a school for an additional day relative to the marginal cost of adding extra hours to a day. This option has not been widely adopted throughout the United States, even in the Massachusetts 2020 programs.

*After-School Programs* are separate from the regular school day. Some programs are run by the school district, employing regular teachers. Others are run by non-profit or for-profit organizations. After-school programs can be offered for the purposes of providing extra academic support, enrichment, or a combination of both. After-school programs also can be offered to promote the well-being of “latchkey” children and to increase community safety by keeping children out of trouble. They can be targeted to specific populations that need extra support, or can be offered to all students.

*Summer School* programs are stand-alone programs with specialized curricula, which often are aligned with the regular school curricula. They may be run by the school district or by non-profit or for-profit providers, and may use regular teachers and/or special program staff. Summer school programs often are recommended or required for targeted populations who need extra academic and social support, but they also are sometimes offered on a voluntary basis to all students. They can offer a variety of programming, including academic support, enrichment activities, physical fitness and nutrition.

*Modified Calendars* or *Year-Round Schools* serve to shorten the long summer break, when some students suffer significant learning losses, by distributing vacation time more evenly throughout the year. Most schools that have adopted a modified calendar use the same number of school days, but some also have added school days to the schedule. In some

cases, intersessions are offered during the breaks to provide academic support or enrichment. According to the National Association of Year-Round Schools, there were 3,000 schools in 46 states and the District of Columbia on some type of year-round schedule in 2007.

## Policy Considerations

### Why Extend Learning Time?

Proponents of extended learning time generally propose it as a means of improving academic achievement, although they identify other benefits that may or may not be related to academic achievement. Some proponents argue that all children should be in school longer, due to the increasing demand for knowledge and skills in the global marketplace and our apparent educational disadvantage. American children have too much free time, some argue, which could be better spent in school.

Massachusetts 2020 cites five primary benefits of adding time to the traditional school day: 1) more time on task; 2) greater depth and breadth of learning; 3) more time for planning and professional development; 4) more time for enrichment and experiential learning; and 5) stronger relationships between teachers and students.<sup>16</sup> The Harvard Family Research Project identified a range of benefits associated with well-designed and well-run after-school and summer programs, including positive outcomes for academics, social/emotional health, risky behavior prevention, and health and wellness.<sup>17</sup>

Skeptics of extended learning time argue that it provides only modest benefits in the best of circumstances, and some research has even shown that poorly designed or run programs can do more harm than good.<sup>18</sup> Furthermore, resources that would be devoted to extended learning time might be better spent improving the quality of existing school time. Others argue that these resources should be devoted

to a variety of other programs that have been proven to be cost-effective in improving academic achievement, such as early-childhood intervention and certain evidence-based programs for disadvantaged students.

The truth appears to lie somewhere in the middle. Research studies generally have shown that children from low socio-economic backgrounds have the most to gain from extended learning time in any of its forms. Elementary and secondary students tend to gain more from extended learning time and out-of-school programs than middle schools students, depending on the content and quality of the programming.<sup>19</sup> Out-of-school learning time appears to have approximately the same effect whether it is delivered in addition to the regular school day or in the summer.<sup>20</sup>

Outcomes of extended learning time depend on many factors, including how the effectively the extra time is used and to whom it is directed. As Silva pointed out,

“Research shows that extending the right kind of time to the students who need it most can improve student learning and effectively close the achievement gap between poor and minority students and their more affluent peers...But the preponderance of evidence on extending time in schools suggests that the benefits of adding to the school day or year are by no means certain or universal.”<sup>21</sup>

Programs that focus on specific, predetermined academic and social outcomes tend to have a greater impact than those that focus narrowly on academic outcomes or those that lack focus or outcome goals. Programs are most successful when they offer a variety of structured, age-appropriate choices, when the environment is supportive, and when the experience is not perceived as punitive. According to Vandell *et al.*,

“Participation in [voluntary structured] activities has been consistently linked to positive academic and social development outcomes in

numerous studies. What appears to be key is that the activities are voluntary, are characterized by sustained engagement and effort, and provide opportunities to build or develop skills.”<sup>22</sup>

With sustained participation in well-designed out-of-school programs, studies have shown that all children, but particularly disadvantaged children, may gain a host of benefits that are not reflected in standardized achievement test scores but nevertheless lead to better overall educational outcomes. These include higher levels of engagement, higher work quality, higher grades, improved attendance, higher self-esteem, improved physical and mental health, lower drop-out rates, and lower incidence of anti-social behaviors, sexual activity and crime.<sup>23</sup>

Few rigorous scientific studies of extended learning time exist, so the magnitude of the reported benefits is difficult to evaluate. Some researchers report significant gains on a number of academic and non-academic measures, while others find minor or statistically insignificant gains. In a few cases, researchers have even reported negative impacts, for example increased delinquent behavior among middle school-aged program participants in a poorly run program.

A study comparing participants and non-participants of the Lighthouse after-school program in Chicago found the participants gained the equivalent of one month in both reading and math.<sup>24</sup> Another study in 2004 reviewed all available research and evaluations of out-of-school time since 1984, and found statistically significant positive impacts on reading and math scores. Other researchers have found similar effects on math and reading outcomes.<sup>25,26</sup>

Despite the lack of robust experimental studies, a RAND Corporation report found nine characteristics that were common to high-quality, effective out-of-school time programs:

- (1) a clear mission; (2) high expectations and positive social norms expected of participants;
- (3) a safe and healthy environment; (4) a

supportive emotional climate; (5) a small total enrollment; (6) stable, trained personnel; (7) appropriate content and pedagogy, relative to the children’s needs and the program’s mission, with opportunities to engage; (8) integrated family and community partners; and (9) frequent assessments.<sup>27</sup>

## The Cost-Effectiveness of Extended Learning Time

Increasing learning time is an expensive proposition. Several analysts have suggested that a 10 percent increase in school time would increase costs by 6 to 7 percent, and the Massachusetts 2020 plan estimated that increasing time by 30 percent would cost an additional 20 percent, or \$1,300 per student.<sup>28</sup> According to these estimates, the marginal cost of adding time appears low relative to the amount of time gained, perhaps making it a bargain. But in cash-strapped school districts the price is high. This is especially true if the school district intends to include all students in extended learning time.

Obviously, different types of programs have different costs. Extending the school day generally costs less than adding school days to the year, because the fixed costs of a school day are high (including transportation and facility operations, among other things). Programs using a higher proportion of professional staff will cost more than those using more para-professionals. Extending the school day or year likely would involve renegotiating teacher contracts, whereas out-of-school programs may have more flexibility in staffing. The ratio of students to staff will affect the cost as well. And programs targeted to specific populations, such as low-achieving students, would cost significantly less than those aimed at the entire student population.

Policymakers must consider investments in extended learning time programs very carefully to ensure that they are making the most of their limited resources. It is important to consider

that research has shown that a poor-quality program, or one that uses unqualified staff, will be ineffective at best, and harmful at worst. If resources are to be directed toward extended learning time in any form, the investment will be wasted unless high standards for programming and staff are maintained.

There may be offsetting factors to the program costs, such as parents' need for and willingness to pay for high-quality childcare in the out-of-school hours. Some have suggested a large unmet demand for these types of services. However, the RAND Corporation asserts that this demand may not actually exist, and advises caution when making assumptions about the market for out-of-school programs.<sup>29</sup>

Currently, insufficient evidence exists to know for certain if extended learning time is a cost-effective use of scarce educational resources. According to a RAND Corporation report,

Before committing public funds to OST [out-of-school time] programming intended to raise academic achievement, as an example, one might want to compare its effectiveness to early childhood interventions, more uniform curriculum, better teacher-staff development, and so on. Because so little is understood about the cost-effectiveness of these programs when compared to other options to meet the same objectives, policymakers should also be cautious about investing in these programs without better information on alternatives.<sup>30</sup>

## Recommendations

As with many K-12 interventions, rigorous research has yet to demonstrate a clear link between extended time and sustained achievement gains. That said, the theory remains promising, and districts across the country are investigating models worthy of attention. Given its atypically short instructional year, Oregon may make an appropriate environment to test well-designed models.

Educators and policymakers interested in proceeding should carefully target those students who stand to gain the most from extended learning time, and offer them the highest-quality, most appropriate programming available. The existing literature suggests a high likelihood of success for programs that: coordinate with regular-day programs; offer a carefully selected variety of academic and enrichment activities; use highly-qualified staff; involve the family and community; focus on a narrow set of outcomes for high-risk students; and achieve intensive, sustained participation.

With that in mind, educators should:

- **Start small.** Programs should be implemented as pilots in carefully selected sites. A small pilot program will help staff and administrators learn from their successes and mistakes on a small scale, which will increase the quality of the pilot program and its implementation, operation and evaluation if it is deployed on a larger scale. A pilot program also will ensure that resources are not wasted on inappropriate or ineffective practices on a large scale.
- **Use extended time to implement proven practices.** The literature suggests that how the extended time is spent matters. Districts could increase the likelihood of success by devoting the time to specific interventions backed by a strong evidence base, including one-on-one tutoring of students at risk of reading failure or small group monitoring of students at risk of dropping out of high school. The delivered program should be implemented with high fidelity to the program model, so that the implementation and operation of the program can be evaluated effectively. This will allow the program's operators and evaluators to develop a clear understanding of if and how the program model works so that it can be adjusted, and so that it can be replicated more effectively at other sites.

A number of non-profit organizations, including Massachusetts 2020, the Harvard Family Research Project and the National Institute on Out-of-School Time, have clearinghouses of research, best practices and model programs. Districts should make use of these and other resources to design the most effective programs to meet their objectives.

- **Learn from the investments.** The program should be designed and implemented with evaluation in mind. A thorough and consistent data collection system will allow outcomes to be measured, compared and used in a meaningful way. The program should be evaluated regularly to measure its effectiveness and to aid in quality improvement. The resource scarcity makes it crucial that every dollar be invested in the most effective practices and programs that will meet the stated outcome goals. Conducting evaluations and using the results is critical to maximizing available resources. Ideally, the program would be part of a randomized controlled study that would add to the existing knowledge base. By conducting well-designed experimental studies of the programs they adopt, policymakers have the opportunity not only to expand their own understanding of what works, but also to help fill the serious deficit in the current knowledge base. Such studies could be eligible for grant funding, and the results could be published in national research journals.

## Endnotes

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<sup>3</sup> Ibid.

<sup>4</sup> Aronson, J., Zimmerman, J., & Carlos, L. (1999). *Improving Student Achievement by Extending School: Is It Just a Matter of Time?* Retrieved June 18, 2008, from www.WestEd.org: www.wested.org/online\_pubs/timeandlearning/TAL\_PV.html

<sup>5</sup> Silva, E. (2007). *On the Clock: Rethinking the Way Schools Use Time*. Washington, D.C.: Education Sector.

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<sup>7</sup> Portland Public Schools. (2007). *Opportunities to Increase the Amount and Quality of Instructional Time*. Portland Public Schools, District Performance Auditor. Portland: Portland Public Schools.

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<sup>10</sup> Cooper, H. (2003). *Summer Learning Loss: The Problem and Some Solutions*. ERIC Clearinghouse on Elementary and Early Childhood Education. Champaign, IL: ERIC.

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<sup>14</sup> www.mass2020.org/elt.currentschools.html

<sup>16</sup> Faberman, D., & Kaplan, C. (2005). *Time for a Change: The Promise of Extended-Time Schools for Promoting Student Achievement*. Boston: Massachusetts 2020.

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<sup>18</sup> Ibid..

<sup>19</sup> Smith, B., Roderick, M., & Degener, S. C. (2005). Extended Learning Time and Student Accountability: Assessing Outcomes and Options for Elementary and Middle Grades. *Educational Administration Quarterly*, 41 (2), 195-236.

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<sup>22</sup> Vandell, D. L., Pierce, K. M., & Dadisman, K. (2004). Out-of-School Settings as a Developmental Context for Children and Youth. In R. Kail (Ed.), *Advances in Child Development and Behavior* (Vol. 33). Elsevier Press.

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<sup>27</sup> Bodilly, S., & Beckett, M. K. (2005). *Making Out-of-School-Time Matter: Evidence for an Action Agenda*. RAND Corporation.

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