



More Time in School: An Analysis of the Costs Associated with Schools Implementing the Massachusetts Expanded Learning Time Initiative

Tammy Kolbe, The University of Vermont

Fran O'Reilly, Evidence-Based Education Research & Evaluation (EBERE, LLC)

Table of Contents

Executive Summary	i
Approach.....	ii
<i>Identifying Resources</i>	<i>ii</i>
<i>The Cost Template & Program Resources</i>	<i>ii</i>
<i>Estimating Program Costs</i>	<i>iii</i>
Limitations	iii
Findings	iv
Introduction	1
Analytic Approach	2
Identifying Resources	2
The Cost Template & Program Resources.....	4
Estimating Program Costs.....	6
Site Selection.....	7
Limitations	8
Findings	11
Program Design & Resources	12
<i>Jacob Hiatt Magnet School</i>	<i>14</i>
<i>Frank M. Silvia Elementary School</i>	<i>17</i>
<i>Joseph A. Browne Middle School</i>	<i>20</i>
<i>Edwards Middle School</i>	<i>22</i>
<i>Matthew J. Kuss Middle School</i>	<i>25</i>
<i>Summary</i>	<i>28</i>
Cost Estimates.....	28
<i>Additional Per Pupil Costs Associated with Implementing Expanded Learning Time Programs</i>	<i>29</i>
<i>Annual Per Pupil Marginal Costs</i>	<i>29</i>
<i>Distribution of Marginal Costs Across Program Elements</i>	<i>30</i>
<i>Factors Influencing Costs</i>	<i>34</i>
Additional Cost Considerations	38
<i>Trade-offs in Staffing Decisions Made by Schools</i>	<i>38</i>
<i>Costs Incurred by States & School Districts</i>	<i>40</i>
<i>Technical Assistance for MA ELT Grantees</i>	<i>41</i>
<i>Impact of MA ELT Grant Amount on Program Costs</i>	<i>41</i>
Appendix A	46

Executive Summary

In 2005, Massachusetts became the first state to initiate an effort to expand learning time in traditional public schools. The Massachusetts Expanded Learning Time Initiative (MA ELT) awards competitive grants to schools that commit to increasing in-school time for all students. Participating schools are required to increase in-school time for all students by at least 300 hours over the district average. With this added time, schools must:

- Increase time spent on instruction or additional supports in core academic subject areas;
- Broaden opportunities for students to engage in enrichment activities; and
- Facilitate teacher collaboration and leadership through increased time for planning and professional development.

Within this framework schools have considerable flexibility in developing an approach that best fits their local context and student needs. This flexibility has resulted in multiple school-level models for implementing ELT, each of which places different weight on the Initiative's required elements and draws on distinct resource packages to support implementation (Kolbe & O'Reilly, 2011). With one exception, all of the grantees have been elementary and middle schools. MA ELT schools receive annual State grants in the amount of \$1,300 per pupil to support their expanded learning time strategy.¹

This cost study complements other evaluation efforts of MA ELT by estimating the costs associated with expanding learning time in five MA ELT schools. Specifically, the study addresses the following questions:

1. In what ways have MA ELT grantee schools deployed resources to support their expanded learning time programs? To what extent are there similarities and differences in their resource allocation strategies?
2. What does it cost to implement the MA ELT Initiative in selected schools?

The five schools selected to participate in the study provide varying degrees of fidelity and maturity in their implementation of the MA ELT Initiative (according to externally defined expectations) and include: 1) Joseph A. Browne Middle School in the Chelsea Public School district; 2) Edwards Middle School in the Boston Public School district; 3) Jacob Hiatt Magnet School (K-6) in the

¹Since the program's inception, the number of schools and districts participating in the MA ELT Initiative has fluctuated annually. For the 2010-11 school year, 19 schools in 9 school districts received MA ELT grants.

Worcester Public School District; 4) Matthew J. Kuss Middle School in the City of Fall River School district; and 5) the North End School (also known as the Frank M. Silvia Elementary School) in the City of Fall River School District. In-depth case studies were completed at each school site to identify the types and amounts of the resources used to implement their expanded learning time program during the 2009-10 school year.

Approach

Identifying Resources

The costs of implementing expanded learning time in selected schools were estimated using a resource cost model (RCM) framework. RCM applies an economic lens to identifying educational program costs by first identifying, from the “bottom up,” all of the resources (e.g., teachers) used to provide a service or program and then assigning dollar values to these resources (Chambers, 1999). The “ingredients method” was used to identify the package of resources used by selected schools to implement expanded learning time. This method calls for enumerating all of the resources used by a program to produce observed effects, including resources that may be contributed or donated from sources outside the school (Levin & McEwan, 2001). We do not categorize the full package of resources necessary to provide standard schooling services within each school; rather, *only the resources required to implement each school’s core ELT components are included in the analysis.*

The Cost Template & Program Resources

A rubric, or “cost template,” was used to estimate costs associated with implementing expanded learning time in selected schools (Rice, 1997, 2001). For this study, we constructed a nested template that describes resources and costs at several levels of program operation. The program components make up the common framework that was applied to organize resources across study sites. Within each program component, we identified specific program *activities* in which schools were engaged. Finally, within each activity, we grouped resources according to five common *properties*: 1) personnel; 2) supplies and materials; 3) facilities; 4) travel; and 5) other program inputs (Levin & McEwan, 2001). Within the nested framework, we list the type and quantity of resources used by a school to deliver its expanded time program. We expect that school-based choices regarding the resources they deploy will be context specific, reflecting student needs and school and community based capacity to support expanded learning time programs. As a result, bottom line costs for implementing expanded learning time may differ across schools in important and meaningful ways.

Estimating Program Costs

A dollar value was assigned to each ingredient in the cost template by multiplying the unit price for a given time period, by the number of units and the time over which the unit is required. Next we calculate the total cost for each ingredient, where total costs represent an ingredients' total annual cost. Ingredient costs are subsequently summed according to their properties (e.g., personnel), activities, and components. The sum of the value of the costs for all components is the total economic cost for a particular school's ELT program. For purposes of this study, however, we are most interested in the marginal costs associated with each school's expanded learning time program. Given that marginal costs may be influenced by program size, cost estimates are reported in terms of the marginal per pupil cost for a school's expanded learning time program.

Initially we use "raw" unit prices to value ingredients (e.g., actual teacher salaries), which reflects the actual costs in local dollars to implement a particular school's expanded learning time program. Then, we adjust personnel unit prices using the Comparable Wage Index (CWI) (Taylor & Fowler, 2006 to adjust for variations in labor costs that are beyond the control of school district administrators (e.g., variations in cost of living across geographic areas). Finally we take the additional step of standardizing the CWI-adjusted labor cost estimates by valuing teacher time using the State's average teacher salary rather than the actual local cost of wages.

Limitations

The purposive selection and small number of school sites included in this study limits our ability to generalize our findings to the larger population of expanded learning time schools in Massachusetts and elsewhere. However, given the inherent variability in expanded learning time programs, our goal was not to establish firm estimates of program costs that would apply more generally to all expanded time schools. Rather, it was our intent to unpack the range of resources used by schools to implement expanded learning time, and the corresponding program costs and contextual factors that may affect these costs. Moreover, while every effort was made to collect the same types and quality of information about each school's program, in some instances comparable data were unavailable. In these instances, we relied on supplemental data sources, and extant knowledge about the school's programs to establish the cost templates. Two schools, in particular, were problematic: Browne Middle School and Edwards Middle School—and their estimates should be interpreted with caution.

Finally, it is important to note that the expanded learning time strategies adopted by the schools in our study continue to evolve. While the approaches in place in the three schools that were members of the initial MA ELT grantee cohort are most stable, even among this group of schools we observed

multiple instances where the schools adapted their programs and practices year-to-year to reflect lessons learned and changing local circumstances. As a result, the cost estimates reflect the strategies, and corresponding resources, for schools' expanded learning time strategies at a particular point in time.

Findings

Across the five study schools, we identified six common program elements that comprise their expanded learning time programs: 1) academic instruction; 2) academic interventions; 3) enrichment activities; 4) teacher professional development; 5) teacher collaboration and planning; and 6) program administration. We use these common program elements as the basis for identifying resources used to implement schools' expanded learning time programs, as well as to summarize the key activities and resources that comprise each school's expanded learning time program. The cost estimates reflect the full range of resources, and corresponding costs, associated with schools' expanded learning time programs - including both those program elements required by MA ELT as well as other activities and resources schools chose to incorporate in their approach to expanding learning time. A table summarizing the program design features, resources and fully adjusted marginal cost estimates are provided below in Table ES-1. Other key findings follow.

- Although each school included the core requirements associated with the MA ELT Initiative in its expanded learning time program, schools' approaches to expanding learning time differ in terms of what program elements are included as well as the amount of resources, in particular personnel time, are dedicated to executing these programs.
- Edwards Middle School adopted the most extensive program of the study schools. Edwards' expanded learning time program dedicates considerable additional resources to academic interventions – both within and outside the school day – and incorporates a broad range of enrichment opportunities for students that rely to a greater extent than found in other schools on a network of outside providers and partners to augment the existing teacher workforce.
- Silvia Elementary and Browne Middle schools both include all of the elements required for the MA ELT Initiative, but their expanded learning time programs rely almost entirely on existing teachers to provide additional academic support, and these schools incorporate a more limited set of enrichment opportunities for students, as compared to other schools included in our study.
- The expanded learning time programs operated by Hiatt Elementary and Kuss Middle schools fall somewhere in between, with each school offering somewhat less extensive expanded learning time programs than Edwards Middle School and more extensive programming than Silvia and Browne. The key points of distinction are the amount of time dedicated to academic interventions and enrichment opportunities and the extent to which outside providers and partners are brought in to support these activities.

- For the 2009-10 school year, annual per pupil marginal costs, valued in terms of raw (or actual) unit prices encountered by schools, range from \$1,418 to \$5,028 per pupil – slightly more than a \$3,600 per pupil difference between schools at the bottom and the top of the distribution. Per pupil marginal costs were lowest at Silvia Elementary School (\$1,418) and highest at Edwards Middle School (\$5,028). Hiatt Elementary School and Kuss Middle School incurred similar costs per pupil for their expanded learning time programs (\$2,395 and \$2,158, respectively), while the cost at Browne was somewhat lower (\$1,882).
- Some of the differences in costs among schools are attributable to geographic variations in labor rates across the State as well as differences in the mix of teachers in particular schools, and districts' teacher salary schedules. With some adjustments for labor costs, the relative ranking in cost across schools stays the same but the difference in annual marginal costs for schools at the top and bottom of the range shrinks to about \$2,700 per pupil.
- In most schools, the bulk of the additional costs associated with extending the school day were associated with increasing the amount of time spent on instruction and academic support in core subject areas. Many schools also used their expanded day as an opportunity to increase investments in academic and non-academic enrichment for students although the extent of additional investment varied substantially across schools (from 8% to 37%).
- Compared to other programmatic elements, schools directed fewer new resources toward teacher professional development and teacher collaboration and planning. In most schools, less than six percent of new resources were dedicated to teacher professional development. Teacher collaboration and planning ranged from a low of 7% at Browne Middle School, to a high of 13% at Silvia Elementary School.
- Most schools in this study incurred few costs for facilities, transportation or other operating expenses as a result of expanding learning time. This may be a result of the approach used in the study to reflect only the direct costs incurred by schools. In some instances, facilities, transportation and other operating expenses are actually district-level costs and are thus not included in our estimates.

The complexity inherent in schools' expanded learning time programs makes it difficult to disentangle specific factors that account for variations in costs. However, schools' programmatic decisions in two key areas appear to account for much of the observed differences in costs: 1) the extent to which schools elect to adopt expanded learning time programs comprised of greater or fewer programmatic elements, and that extend beyond the basic framework set forth by the MA ELT Initiative; and 2) schools' staffing decisions, in particular their decisions to augment teacher time with other instructional personnel and outside providers.

Table ES-1: Key Components of Study Schools' Expanded Learning Time Programs, and Marginal Per Pupil Cost Estimates

	Jacob Hiatt Elementary School	Frank M. Silvia Elementary School	Joseph A. Browne Middle School	Edwards Middle School	Matthew J. Kuss Middle School
Academic Instruction	- Additional time dedicated to literacy, math, science and social studies instruction.	- Additional time dedicated to literacy instruction - New curricula - Classroom materials to support instruction	- Additional time dedicated to literacy, math, social studies instruction, and the unified arts	- No time added to existing blocks for instruction in core subject areas, or the unified arts -	- No time added to existing blocks for instruction in core subject areas, or the unified arts
Academic Interventions	- 8th hour math interventions (3 days per week) - Tutoring for selective students during an optional 9th period	- Embedded interventions in lower grade level classrooms (literacy and math) - Stand-alone intervention blocks at end of the school day in literacy and math for upper grades (two times per week)	- Groupings for workshops - Tiered intervention workshops in ELA and Math	- Academic Leagues - Acceleration Academies - Tutoring - Differentiated scheduling for students assigned to academic interventions	- Differentiated scheduling for students in academic interventions and enrichment - Intersession academic camps
Enrichment	- Embedded academic enrichment in core subject area classes by outside partner organizations - Field trips - 8th hour electives (2 days per week)	- “Sacred Hour” elective block (Once per week; all grades) - Anti-bullying program (upper grades) - Mandatory chorus (upper grades) - Field trips (all grades)	- 7th hour “elective period” - Field trips	- Dedicated elective block (Four days per week)	- ELT Block (“Ramp up” interventions and electives) (Daily) - “Advisory” period (Daily)
Teacher Professional Development	- Teacher-led PD - Facilitated PD - Instructional rounds	- Early release days - Literacy training for paraprofessionals	- Early release days - Professional learning communities - Teacher conferences and external training/professional development	- Friday professional time	- Release days during school year - Summer professional development
Teacher Collaboration/ Planning	- Common grade level planning time (1 day per week) - Occasional grade-level assemblies for teacher release - No additional individual teacher planning time	- Common planning time teachers (general and special education) - Additional individual teacher preparation time	- Common planning time (optional) - Additional individual planning time	- Teacher teams - Common planning time - Additional individual planning time	- Common planning time (cluster and content/curriculum) - Additional individual teacher preparation periods
Program Administration	- ELT coordinator - Instructional Leadership Team (ILT) - Mass 2020 TA/Coaching - Grant reapplication & reporting	- ELT program coordination (school principal and ILT) - Mass 2020 TA/Coaching - Grant reapplication & reporting	- ELT coordinator - ELT planning team - Mass 2020 TA/Coaching - Grant reapplication & reporting	- ELT coordinator - Instructional Leadership Team (ILT)	- ELT program coordination (school principal and ILT) - School redesign team - Mass 2020 TA/Coaching - Grant reapplication & reporting
Adjusted Per Pupil Cost	- \$2513	- \$1570	- 2,006	- 4,332	- 2,412

Introduction

In 2005, Massachusetts became the first state to initiate an effort to expand learning time in traditional public schools. The Massachusetts Expanded Learning Time Initiative (MA ELT) awards competitive grants to schools that commit to increasing in-school time for all students. MA ELT differs from other strategies that simply add in-school time or append discrete activities or programs to the school schedule. The Initiative involves not only adding time to the school calendar, but also redesigning a school's schedule and programming. Although the specific expectations and approaches to working with schools that participate in the MA ELT Initiative have changed over time, its basic objectives have remained constant. Participating schools are required to increase in-school time for all students by at least 300 hours over the district average. With this added time, schools must:

- Increase time spent on instruction or additional supports in core academic subject areas;
- Broaden opportunities for students to engage in enrichment activities; and
- Facilitate teacher collaboration and leadership through increased time for planning and professional development.

Within this framework schools have considerable flexibility in developing an approach that best fits their local context and student needs. This flexibility has resulted in multiple school-level models for implementing ELT, each of which places different weight on the Initiative's required elements and draws on distinct resource packages to support implementation (Kolbe & O'Reilly, 2011).

To date, 26 schools in 12 school districts have been awarded grants through the MA ELT Initiative.² With one exception, all of the grantees have been elementary, middle, or K-8 schools. MA ELT schools receive annual State grants in the amount of \$1,300 per pupil to support their expanded learning time program. MA ELT is managed through a public-private partnership between the Massachusetts Department of Elementary and Secondary Education (ESE) and Massachusetts 2020 (Mass 2020), which shares oversight and support for the Initiative. Additionally, Focus on Results (FOR) and Mass 2020 provide ongoing coaching and technical assistance to support grantees' school redesign efforts in many of the schools.

² Since the program's inception, the number of schools and districts participating in the MA ELT Initiative has fluctuated annually. For the 2010-11 school year, 19 schools in 9 school districts received MA ELT grants.

Adding in-school time has the potential to be a “high cost” policy. For instance, personnel costs, particularly teacher salaries and benefits, typically comprise the largest share of school budgets, and adding time to the school day or year may significantly increase these costs. However, almost no research exists on the resources required and corresponding costs associated with increasing in-school time (Farbman & Kaplan, 2005; Roza & Miles, 2008).

Since the first year of implementing the MA ELT Initiative, ESE has funded an independent multi-year evaluation of the Initiative. This evaluation has two interrelated parts – an implementation evaluation that examines school efforts to develop and put into operation their expanded learning time strategies, and an outcome evaluation that examines the potential effects expanded learning time has had on schools, teachers and students. This cost study complements the ongoing evaluation effort by estimating the costs associated with expanding learning time in five MA ELT schools. Specifically, the study addresses the following questions:

3. In what ways have MA ELT grantee schools deployed resources to support their expanded learning time programs? To what extent are there similarities and differences in their resource allocation strategies?
4. What does it cost to implement the MA ELT Initiative in selected schools?

In the following section, we discuss the methods used to construct school-level cost estimates for implementing expanded learning time in public elementary and middle schools, as well as our approach to selecting the schools included in the study. We subsequently present the study’s findings in two parts. First, we discuss the programmatic differences in how selected schools implement expanded learning time, and the corresponding resource allocation decisions that go along with these differences. These descriptions provide the context for understanding why some programs are more costly than others. Second, we present the annual per pupil marginal costs associated with schools’ expanded learning time programs, and we examine the distribution of resources and costs across key programmatic elements. The report concludes with a summary of the study’s findings.

Analytic Approach

Identifying Resources

The costs of implementing expanded learning time in selected schools were estimated using a resource cost model (RCM) framework. RCM applies an economic lens to identifying educational program costs by first identifying, from the “bottom up,” all of the resources (e.g., teachers) used to provide a service or program and then assigning dollar values to these resources (Chambers, 1999).

In doing so, RCM provides a picture of the package of resources, and their corresponding costs, required to implement a selected program and produce observed outcomes. This approach stands in contrast to “top down” accounting-oriented approaches that rely on program expenditures and budgeted amounts to estimate the fiscal, or monetary, costs associated with program operations (Chambers, 1999; Hartman, Bolton, & Monk, 2001). Fiscal cost estimates provide a mechanism for understanding how educational dollars are spent, but do not provide the types of information required to understand what resources actually went into producing observed program or policy outcomes (Chambers, 1999; Hartman, et al., 2001; Levin & McEwan, 2001; Rice, 1997). For instance, fiscal data derived from expenditure and budget information may: 1) not include information on all of the resources used (e.g., donated resources); 2) misrepresent the true cost of a particular resource (e.g., incremental payment vs. total resource cost); 3) not account for resources that have been “reallocated” to a program for another purpose or are “shared” across purposes; 4) cover a much larger unit of operation, making it difficult to separate out expenditures for specific programs or activities (Levin & McEwan, 2001; Rice, 2001).

We rely on the “ingredients method” to identify the resources used by selected schools to implement their expanded learning time programs. This method calls for enumerating all of the resources used by a program to produce observed effects, including resources that may be contributed or donated from sources outside the school (Levin & McEwan, 2001). The list of ingredients specified depends on the nature of a school’s expanded learning time program components and services. For instance, some programs may incorporate larger amounts of instructional time, while others place more emphasis on student enrichment activities or teacher professional development.³ We do not, however, categorize the full package of resources necessary to provide standard schooling services within each school; rather, *only the resources required to implement each school’s core ELT components are included in the analysis.*⁴

We conducted in-depth case studies at each school site to identify the types and amounts of the resources used to implement their expanded learning time program during the 2009-10 school year. Data collection was an iterative process, involving:

1. Reports and documents generated by the MA ELT initiative’s external program evaluation, as well as other materials available from Mass 2020 (e.g., grant applications);

³ We do not, however, enumerate state- or district-level resources or program inputs on the part of Mass 2020 or Focus on Results, that support schools’ expanded learning time programs.

⁴ Additionally, in this study we restrict our estimation of program costs to those incurred by schools. District-level resources, and corresponding costs, are not included.

2. Documents provided by participating districts and schools, including program descriptions, school schedules, personnel rosters, teacher contracts, salary schedules, agreements with external partners, budget and expenditure data, and information on pension and benefit payments.
3. Multiple visits to and follow up telephone interviews with selected schools, consisting of semi-structured interviews with key district and school personnel.

The Cost Template & Program Resources

A rubric, or “cost template,” was used to estimate costs associated with implementing expanded learning time in selected schools (Rice, 1997, 2001). While bottom line estimates of program costs are necessary for comparisons, this summary information masks variations in the distribution of resources and costs that may occur across sites. The cost template facilitates a systematic process for “unpacking” program costs and resources according to meaningful units of analysis, and in a way that captures site-specific variation (Rice, 2001; Rice & Hall, 2008). Adopting a framework for describing program resources and costs that simultaneously describes site-specific variation is an important consideration for this study as schools have a great deal of autonomy when implementing expanded learning time.

For this study, we adapted the cost template used by Rice and colleagues in previous evaluations of educational program costs (Rice, 2001; Rice & Brent, 2001; Rice & Hall, 2008). Based on this model, we constructed a nested template that describes resources and costs at several levels of program operation. (See Figure 1.) Specifically, the template relies on multiple levels of categorization to describe resources and costs. At the first level, the template is organized according to seven key *program components*: 1) program administration; 2) instruction in core subject areas; 3) academic interventions and support; 4) enrichment (academic and non-academic); 5) teacher professional development; 6) teacher collaboration and planning; and 7) facilities, transportation and other direct costs. (See Figure 1, Column 1.) These program components make up the common framework that was applied to organizing resources across study sites. In identifying components included in a school’s expanded learning time program, we considered the full range of programming in place, not just those elements required by the MA ELT Initiative. We did this to capture all of the resources, or ingredients, a school uses in implementing expanded time. This approach permits us to better understand the resource packages, and corresponding costs, that contribute to schools’ programs and observed effects. Within each program component, we identified specific program *activities* in which schools were engaged. For example, in one school, within the “teacher collaboration and planning” program component, we identified two key activities: “common planning time” and “individual teacher preparation periods.” Both activities were either added or modified as a result of the school’s

expanded learning time program (See Figure 1, Column 2.) Finally, within each activity, we grouped resources according to five common *properties* 1) personnel; 2) supplies and materials; 3) facilities; 4) travel; and 5) other program inputs (Levin & McEwan, 2001). (See Figure 1, Column 3.)

Figure 1: Cost Template

ELT Program Components	Activity	Resource Category	Ingredients	Amount	Unit Value	Period	Shared	Total Cost	Reallocated	Marginal Cost
Administration & Oversight (School)										
	General Administration									
		Personnel								
		Supplies & Materials								
		Facilities								
		Other Program Inputs								
Academic Instruction										
Differentiated Scheduling/Targeting										
Academic Enrichment										
Non-Academic Enrichment (Teacher-led)										
Teacher Professional Development										
Teacher Collaboration & Planning										
								0	0	0
								0	0	0

Within the nested framework, we list the type and quantity of resources used by a school to deliver its expanded time program. In addition, to the extent possible, we also differentiate among ingredient characteristics. For example, different schools may choose to utilize teachers with varying qualifications to implement their expanded learning time program. In some schools, more experienced teachers may be assigned to expanded instructional hours in math and literacy to boost student learning. Additionally, some schools may rely more or less heavily on outside providers and consultants to supplement their existing teacher workforce. This may be due to the fact that not all teachers in a given school elect to teach the longer school day, or because the school decides to augment existing teacher time and talents with external personnel. These types of programmatic decisions are reflected in how the ingredients are depicted, and valued, in the cost analysis. (See Figure 1, Column 4.) While reflecting the attributes of the actual resources used by schools to implement expanded learning time provides an accurate picture of a specific school’s costs, we expect that school-based choices regarding the resources they deploy will be context specific, reflecting student needs and school and community based capacity to support expanded learning time programs. As a result, bottom line costs for implementing expanded learning time may differ across schools in important and meaningful ways. Finally, the number of units for a given resource is specified; to the extent possible, units are described using their natural metric (e.g., teacher labor hours). (See Figure 1, Column 5.)

Estimating Program Costs

A dollar value was assigned to each ingredient listed in the cost template by multiplying the unit price, for a given time period, by the number of units and the time over which the unit is required. (See Figure 1, Columns 6-7.) Unit prices are the market price for a given resource. We initially use “raw” unit prices to value ingredients. This approach values program costs in terms of the actual resource costs encountered by school sites. Applying raw unit prices is a necessary first step for the purpose of understanding the actual costs incurred by schools for their expanded learning time programs. The next step was to calculate the total cost for each ingredient. (See Figure 1, Column 9.) Here, the total costs represent an ingredients’ total annual cost. In estimating total costs, we account for instances where the same ingredient (e.g., teacher or school administrator) contributes to more than one program component or activity. In these instances, to avoid double counting an ingredients’ value, the “shared” column adjusts for where an ingredient is shared across program components or activities (Rice, 2001). Where possible, an ingredient’s value was prorated by the amount not required, due to resource sharing across domains. In cases where insufficient information was available to determine a prorated value, we accounted for an ingredient’s value once in the cost template. Total costs were calculated for each ingredient using the following formula:

$$\text{Total Cost} = [(\text{Amount-Shared}) * \text{Unit Value}] / \text{Period}$$

Ingredient costs are subsequently summed according to their properties (e.g., personnel), activities, and components. (See Figure 1, Column 9.) The sum of the value of the costs for all components is the total economic cost for a particular school’s ELT program. However, for purposes of this study, we are most interested in the marginal costs associated with a school’s expanded learning time program. That is, those additional resources over-and-above what was utilized by the school prior to initiating its expanded learning time program. Accordingly, resources that are “reallocated” from their prior use are deducted from the total costs (Rice, 1997). (See Figure 1, Column 10.) Given that marginal costs may be influenced by program size, cost estimates are reported in terms of the marginal per pupil cost for a school’s expanded learning time program.

As noted above, the initial marginal cost estimates for a school’s expanded learning time program, however, are based on valuing resources using raw unit prices. For instance, we use actual teacher salaries to value teacher time and the time for external providers and consultants who are brought in by schools to provide academic interventions and enrichment opportunities, and other local prevailing rates for valuing other personnel and non-personnel resources. The resulting cost estimates represent the actual cost – in local dollars – to implement a particular school’s expanded learning time program.

Raw unit prices, however, may complicate comparisons across sites, especially given statewide differences in the cost of living and corresponding personnel labor rates. This is particularly the case for teacher salaries. Schools included in this study are located in very different labor markets, with different prevailing labor costs. Given that instructional personnel time comprises the largest input into expanding learning time in schools, as a second step we adjust unit prices for personnel resources across districts within the State. Initially, we adjust personnel unit prices using the Comparable Wage Index (CWI) (Taylor & Fowler, 2006). The CWI provides an education-sector specific adjustment for variations in labor costs that are beyond the control of school district administrators (e.g., variations in cost of living across geographic areas).⁵

Simply adjusting personnel prices does not correct for other variations in personnel costs that are inherent in school districts. For instance, teacher staffing varies from school-to-school, with some schools having a cadre of more experienced or highly educated teachers who command more pay according to their district's salary schedule. Additionally, teacher salary schedules differ from district-to-district and may reflect other contextual factors that arise in the context of labor negotiations with teacher unions. Cost adjustments using the CWI, however, do not fully account for the other factors that drive variations in teacher labor costs across school districts. As a result, we take the additional step of standardizing the CWI-adjusted labor cost estimates by valuing teacher time using the average teacher salary for Massachusetts' public school teachers, rather than the actual local cost of wages. This final adjustment controls for variations in teacher salary schedules across districts, while accounting for the mix of teachers and cost variations that are attributable to district-specific variations in teacher salary schedules.

Site Selection

In selecting schools for this study, our goal was to identify sites that, when taken together, would provide a snapshot of the different approaches, and corresponding resource packages MA ELT grantee schools used to expand learning time. Findings from the external evaluation of the MA ELT initiative suggest that schools implement the expanded learning time with varying degrees of fidelity, and have adopted a broad range of strategies for adding time to instruction in core subject areas, enrichment, and teacher professional time (Checkoway et al., 2011). Moreover, a review of results for individual schools indicates that expanded learning time has resulted in considerable learning gains in some schools, but not in others (Mass 2020, 2011).

⁵ We use the CWI school district file that includes an adjustment for each local education agency (LEA) in the NCES Common Core of Data (CCD database). District-level adjustments are then indexed against the aggregate CWI for the State of Massachusetts. The 2005 school year is the most up-to-date CWI file available. The resulting adjustments control for systematic differences across localities in education personnel general wage levels that are outside the control of district and school administrators, notably variations in the cost of living across localities.

In this context, we applied two primary criteria when selecting the study sites. First, we were most interested in describing the resources necessary to sustain a school-based expanded learning time program. We prioritized schools mature programs, having been in operation for at least two years at the time data collection was undertaken, as well as schools that represent a variety of geographic and cultural contexts.⁶ Second, an effort was made to select grantees identified as implementing the MA ELT Initiative with varying degrees of fidelity (according to externally defined expectations for ELT implementation).⁷ (See Figure 2.) Data from multiple sources were used to determine the extent to which schools' implementation was consistent with MA ELT expectations, including: 1) descriptive information and interviews with the State's technical assistance providers, Mass 2020 and Focus on Results; 2) school-based site visit reports compiled by the State; 3) school-level program documents (e.g., schedule information, agreements with external partners for enrichment activities, budget and expenditure data). Additionally, anticipating that the resources required to implement expanded learning time might differ by grade level, we included a mix of elementary and middle schools.⁸

Five schools were selected to participate in the study: 1) Joseph A. Browne Middle School in the Chelsea Public School district; 2) Edwards Middle School in the Boston Public School district; 3) Jacob Hiatt Magnet School (K-6) in the Worcester Public School District; 4) Matthew J. Kuss Middle School in the City of Fall River School district; and 5) the North End School (also known as the Frank M. Silvia Elementary School) in the City of Fall River School District. (Figure 3 provides an overview of each schools' characteristics.)

Limitations

The purposive selection and small number of school sites included in this study limits our ability to generalize our findings to the larger population of expanded learning time schools, in Massachusetts and elsewhere. However, given the inherent variability in expanded learning time programs, our goal was not to establish firm estimates of program costs that would apply more generally to all expanded time schools. Rather, it was our intent to unpack the range of resources used by schools to implement expanded learning time, and the corresponding program costs and contextual factors that may affect these costs.

⁶ Although Browne Middle school was in its second year of implementation during the 2009-10 school year, the school was included given its high proportion of ELL students and English Language Immersion programs. We believed these factors would provide additional variation to our school sample with respect to MA ELT grant implementation.

⁷ Each of the schools participating in the MA ELT Initiative is expected to adhere to the list of expectations, and associated indicators, listed in Figure 2 when developing and implementing their expanded learning time strategy.

⁸ Presently, only one high school participates in the MA ELT Initiative. This school employed expanded learning time prior to receiving a state grant and has a unique focus as an auditioned performing arts high school.

Moreover, while every effort was made to collect the same types and quality of information about each school’s program, in some instances comparable data were unavailable. In these instances, we relied on supplemental data sources, and extant knowledge about the schools’ programs to establish the cost templates. In these instances, we made every effort to verify with the schools and outside sources the assumptions that we made. However, there were inherent limitations in this approach. The availability of data for two schools, in particular, was problematic: Browne Middle School and Edwards Middle School.

Figure 2: Implementation Expectations for MA ELT Grantees

ELT Redesign Supports a Clear, School-wide Academic Focus	The school’s plan for implementing the MA ELT model is aligned with the school’s overall academic focus. This academic focus drives instructional improvement and continuous measurable growth in student learning throughout the redesigned day and year. The design and implementation of expanded learning time is based on a data-driven assessment of student needs and works to support a clear set of school-wide achievement goals.
Additional Time for Core Academics	The school uses additional time to accelerate learning in core academic subjects by making meaningful improvements to the quality of instruction, in support of school-wide achievement goals.
Additional Time for Enrichment	The school uses additional time to offer enrichment opportunities that connect to state standards, build student skills and interests, and deepen student engagement in school and learning, in support of school-wide achievement goals.
Additional Time for Teacher Leadership & Collaboration	The school uses additional time to build a professional culture of teacher leadership and collaboration (e.g., designated collaborative planning time, on-site targeted professional development) focused on strengthening instructional practice and meeting school-wide achievement goals.
Focused & Collaborative Leadership	The principal and instructional leadership teams are fully committed to expanding learning time to improve instructional practice and to bringing others – teachers, students, families, partners, and the community – into the process of redesign and implementation in support of school-wide achievement goals.
Resources Are Aligned and Focused	The school demonstrates clear evidence that it is making decisions around resource allocation that are aligned with the successful implementation of the MA ELT Initiative and focused on meeting school-wide achievement goals.
District Leadership Supports ELT	The district actively supports all MA ELT schools in ways that are consistent with the expectations for MA ELT grantees by providing leadership, support, supervision, long-term district planning and creative problem solving to remove barriers and ensure schools can meet rigorous achievement goals.

Source: Mass 2020, Technical Assistance Documentation, 2010

Figure 3: Description of School Sites, 2009-10

	Jacob Hiatt Magnet School	Frank M. Silvia Elementary School	Joseph A. Browne Middle School	Edwards Middle School	The Matthew J. Kuss Middle School
<i>School Characteristics</i>					
School District	Worcester Public Schools	City of Fall River Public Schools	Chelsea Public Schools	Boston Public Schools	City of Fall River Public Schools
Grades Served	PK-6 ^a	PK-5 ^a	5-8	6-8	6-8
Enrollment	428	552	442	496	596
% Low Income	71.1	66.1	92.1	90.1	83.1
% Non-white	77.2	31.4	92.1	87.5	26.5
% First Language Not English	35.5	14.6	82.8	48.1	27.5
% SPED	14.9	25.3	9.3	30.2	19.6
% Math Proficiency	59	58	36	40	47
% Reading Proficiency	59	58	49	56	57
<i>ELT Program Characteristics</i>					
SY First Received ELT Grant	2006-07	2007-08	2008-09	2006-07	2006-07
School Day for Students	7:50 a.m. – 3:30 p.m. (~ 7 ½ hours)	7:30 a.m. – 3:30 p.m. (~ 8 hours)	7:35 a.m. – 3:36 p.m. (M, W-F) 7:35 – 2:20 p.m. (T) (~8 hours M, W-F) (~6 hours T)	7:20 a.m. – 3:45 p.m. (M-Th) 7:20 a.m. – 11:45 a.m. (F) (~8 ¼ hours M-Th) (~4 ½ hours F)	7:13 a.m. – 3:30 p.m. (~ 8 ½ hours)
Days in School Week	5	5	4.5	4.5	5
Instructional Days per Year	180	180	180	180	180

^a The pre-kindergarten grade level in the Silvia and Hiatt schools are not included in the schools' expanded learning time program. As a result, they were excluded from the cost study, and reported enrollment numbers are for K-5 and K-6, respectively.

At Browne, there was a change in school leadership after our initial data collection efforts. This prevented us from further clarifying information about some programmatic elements, and resulted in us not obtaining actual salary and wage information for school personnel. As a result, we based some of our resource assumptions on what we observed in other schools and we used the district's average teacher salary information provided by the State to value instructional personnel time. However, information gathered during our site visits to the schools suggested that average teacher salaries for Browne may in fact be lower than the district average. Accordingly, there is reason to believe that bottom line cost estimates for Browne may be overestimated.

For Edwards, while we were able to complete our data collection regarding the school's expanded learning time program and resource allocation decisions, we also could not obtain actual salary and wage information for school personnel directly from the school. We were able to derive some of this information for school leadership and other support personnel from budget documents that were shared with us. But, we used information on average district teacher salaries provided by the State to value teacher time. We were unable to tell, however, the extent to which average teacher salaries at Edwards were above, at, or below the district-wide average and, as a result, do not know the extent to which this approach to valuing teacher time may over or under estimate the costs associated with the school's expanded learning time program.

Finally, it is important to note that the expanded learning time strategies adopted by the schools in our study continue to evolve. While the approaches in place in the three schools that were members of the initial MA ELT grantee cohort are most stable, even among this group of schools we observed multiple instances where the schools adapted their programs and practices year-to-year to reflect lessons learned and changing local circumstances. As a result, the cost estimates reflect the strategies, and corresponding resources, for schools' expanded learning time strategies at a particular point in time.

Findings

We present the study's findings in two parts. First, we describe what we learned about how each school designed its expanded learning time program and the resources – new and existing – that were used to support their programs. We then present per pupil cost estimates for each school's expanded learning time program, and the distribution of these costs across key program areas such as core

instruction, enrichment, and teacher professional time. This is followed by a discussion of the factors that appear to account for differences across schools in expanded learning time program costs.

Program Design & Resources

The five schools included in this study relied on a broad set of activities and resources to support their expanded learning time programs. The MA ELT Initiative provides a common framework that schools use to develop their expanded learning time program that directs participating schools to increase time spent on core academic subjects, enrichment activities, and teacher professional time. Within this framework, however, schools are free to develop expanded learning time programs that best fit their local context and needs. Across the schools, we identified six common program elements that comprise their expanded learning time programs: 1) academic instruction; 2) academic interventions; 3) enrichment activities; 4) teacher professional development; 5) teacher collaboration and planning; and 6) program administration. We use these common program elements as the basis for identifying resources used to implement schools' expanded learning time programs, and organizing our discussion of the costs associated with each school's expanded learning time program. Figure 4 uses these program elements to summarize the key activities and resources that comprise each school's expanded learning time program, and in the following sections we use this framework to further describe each school's expanded learning time program.

Figure 4: Key Components of Selected Schools' Expanded Learning Time Programs

	Jacob Hiatt Elementary School	Frank M. Silvia Elementary School	Joseph A. Browne Middle School	Edwards Middle School	Matthew J. Kuss Middle School
Academic Instruction	- Additional time dedicated to literacy, math, science and social studies instruction.	- Additional time dedicated to literacy instruction - New curricula - Classroom materials to support instruction -	- Additional time dedicated to literacy, math, social studies instruction, and the unified arts	- No time added to existing blocks for instruction in core subject areas, or the unified arts	- No time added to existing blocks for instruction in core subject areas, or the unified arts
Academic Interventions	- 8 th hour math interventions (3 days per week) - Tutoring for selective students during an optional 9 th period	- Embedded interventions in lower grade level classrooms (literacy and math) - Stand-alone intervention blocks at end of the school day in literacy and math for upper grades (two times per week)	- Groupings for workshops - Tiered intervention workshops in ELA and Math	- Academic Leagues - Acceleration Academies - Tutoring - Differentiated scheduling for students assigned to academic interventions	- Differentiated scheduling for students in academic interventions and enrichment - Intersession academic camps
Enrichment	- Embedded academic enrichment in core subject area classes by outside partner organizations - Field trips - 8 th hour electives (2 days per week)	- "Sacred Hour" elective block (Once per week; all grades) - Anti-bullying program (upper grades) - Mandatory chorus (upper grades) - Field trips (all grades)	- 7 th hour "elective period" - Field trips	- Dedicated elective block (Four days per week)	- ELT Block ("Ramp up" interventions and electives) (Daily) - "Advisory" period (Daily)
Teacher Professional Development	- Teacher-led PD - Facilitated PD - Instructional rounds	- Early release days - Literacy training for paraprofessionals	- Early release days - Professional learning communities - Teacher conferences and external training/professional development	- Friday professional time	- Release days during school year - Summer professional development
Teacher Collaboration/ Planning	- Common grade level planning time (1 day per week) - Occasional grade-level assemblies for teacher release - No additional individual teacher planning time	- Common planning time teachers (general and special education) - Additional individual teacher preparation time	- Common planning time (optional) - Additional individual planning time	- Teacher teams - Common planning time - Additional individual planning time	- Common planning time (cluster and content/curriculum) - Additional individual teacher preparation periods
Program Administration	- ELT coordinator - Instructional Leadership Team (ILT) - Mass 2020 TA/Coaching - Grant reapplication & reporting	- ELT program coordination (school principal and ILT) - Mass 2020 TA/Coaching - Grant reapplication & reporting	- ELT coordinator - ELT planning team - Mass 2020 TA/Coaching - Grant reapplication & reporting	- ELT coordinator - Instructional Leadership Team (ILT)	- ELT program coordination (school principal and ILT) - School redesign team - Mass 2020 TA/Coaching - Grant reapplication & reporting

Jacob Hiatt Magnet School

The Jacob Hiatt Magnet School, a K-6 elementary school, is one of three schools in the Worcester Public School district to participate in the MA ELT Initiative. The school operates as a district magnet school, and the school's students are primarily low-income and non-White. Hiatt was a member of the first cohort of MA ELT grantees (2005-06 school year). For the 2009-10 school year, Hiatt offered a 7½-hour school day, five days per week. This school day is approximately 90 minutes longer than the district average.

A key feature of Hiatt's expanded learning time approach is providing additional time for instruction in core academic subjects. All students participate in a daily literacy block that encompasses reading, writing and language development. Prior to implementing its expanded learning time program, all students received 90 minutes of literacy instruction per day. With expanded time, students in kindergarten and grade 1 receive 180 minutes per day, grades 2 and 3 receive 130 minutes per day, and grades 4-6 receive 125 minutes per day. Typically, the block's first half is used for whole group instruction. The second half is used for guided, leveled reading instruction in small groups. During this time, additional instructional staff – including ELL and special education teachers, as well as teacher interns from local colleges - are “pushed into” classrooms to provide further instructional support. In addition to the literacy block, students in grades 2 and 3 also receive an additional 15 minutes of independent reading time per day, and students in grades 4-6 have an additional 20 minutes per day for independent reading.

With expanded time, the school also increased the amount of time dedicated to math instruction. Students in kindergarten through grade 3 have a daily 90-minute math block, and students in grades 4-6 have a daily 130-minute math instructional block. The amount of time available for instruction in science and social studies also increased. Although it varies by teacher and study unit, typically students receive science instruction three days per week and social studies two days per week. In kindergarten and first grade, students receive on average 35 minutes of instruction in either social studies or science per day, which amounts to about 20 minutes per day of additional instructional time in these core subjects. Students in grades 2 and 3 usually have a one-hour block (60 minutes) of social studies or science instruction each day – about 40 minutes per day more instruction in these subject areas than prior to ELT. In grades 4-6, students receive an average of 70 minutes of social studies or science instruction per day, an increase of approximately 50 minutes per day from what students received prior to expanding the school schedule.

The school's expanded schedule also includes an “8th hour” – a daily 55-minute block of time dedicated to academic interventions and enrichment. Two days per week, students participate in

strand-specific math enrichment groups and one day per week students participate in “math games” that consist of math problem solving exercises that correspond to specific units of study. Within a grade level, students are typically assigned to one of three groups: remediation, reinforcement, and acceleration. Teachers use results from formative and summative assessments to group students, and students are identified as falling in the “red,” “yellow,” or “green” zones. Red-level students require intense intervention, and receive instruction from both classroom teachers and one or more specialists (e.g., special education or ELL); yellow-level students receive a “double dose” or the “the core plus more” strategic interventions; and green-level students work within the core and receive reinforcement or acceleration. The 8th hour intervention groups are led by Hiatt instructional staff, with instructional coaches or master teachers leading the highest level groups, classroom teachers leading the middle group, and special education teachers leading the lowest ability groups.

For a small number of students, the Hiatt schedule includes a 9th hour (i.e., post 8th hour) three days per week. Tuesday through Thursday, three teachers remain after school to provide additional tutoring and academic support to struggling students. About 30 students receive additional help each week.

In addition to increasing the amount of time spent on core instruction and academic interventions, the Hiatt used its MA ELT Initiative grant to expand the number and type of enrichment opportunities available to students. The School’s MA ELT Initiative performance agreement includes a minimum of 92 hours of enrichment programming per year for students – about 15% more than the district average. For the 2009-10 school year, the school set aside approximately \$30,000 of its MA ELT Initiative grant budget to support a mix of embedded (in core academic classes) and stand-alone enrichment opportunities. Hiatt employs a full-time ELT coordinator to organize and schedule these activities. Enrichment activities at Hiatt occur three ways. First, students engage in cultural and community-led partnership programs that integrate several disciplines of study into the classrooms. For instance, for the 2009-10 school year, early primary grade students (K-1) participated in two, three-week hands on learning projects (e.g., landscape puzzles) and science and language-based shows (e.g., puppet making related to Aesop’s fables). Students in grades 2-6 participated in two or more, six-week hands on learning projects (e.g., topographical maps and Asian Scroll Painting, integrated with social studies curriculum). In both instances the projects were led by outside partners who visited the school once per week.

Partners are selected through a competitive bid process overseen by the school’s ELT coordinator. For the 2009-10 school year, partnerships included the Worcester Art Museum, Clark University, EcoTarium, Massachusetts Audubon Society, Old Sturbridge Village, and a number of individual

artists who developed specific instructional modules for students. Second, the school relies heavily on field trips to augment the general education curriculum. For the 2009-10 school year, students in grades K-6 participated in 22 off-site educational programs. Finally, two days per week – during the 8th hour - students participate in “elective” coursework. Students are able to choose from a broad-range of electives (e.g., cooking, robotics, and international dance) and have the option of participating in a different activity each term. All electives are required to be “standards based,” with a clear link to the State’s curricular frameworks. For the most part, elective courses are developed and taught by Hiatt instructional staff; very few courses are taught by outside providers or volunteers. The school sets aside a separate budget to pay for the supplies and materials teachers need for their enrichment activities.

Teacher professional development opportunities also increased when Hiatt expanded its school day. With an expanded school schedule, most professional development opportunities for teachers occur during the school day and are facilitated by Hiatt staff. During the 2009-10 school year, teachers were given six release days for professional development topics on a variety of topics, including data boards, common planning, and open response. Substitute teachers provided release time so that teachers could participate in on site professional development. The school’s MA ELT Initiative grant also was used to bring in external experts and consultants to provide professional development on selected topics. For example, during the 2009-10 school year, Hiatt hired a consultant to come in and work with teachers on integrating writing into the curriculum. The practice of “instructional rounds” also was introduced as a new professional development opportunity at the school. Instructional rounds provide opportunities for teachers to observe best practices in other classrooms, and are considered embedded professional development. The school’s expanded schedule provides additional opportunities for rounds and permits longer observation periods than prior to the school’s expanded learning time program.

The school’s expanded schedule also permitted the school to build common planning time for teachers into the school week. Each grade level team meets one morning each week for 45 minutes, and classrooms are covered using teacher interns from local colleges. Common planning time among grade level teachers is used to identify students’ individual and collective needs, and to align curriculum and instruction with these needs. The school also schedules occasional grade level assemblies to provide teachers opportunities to collaborate. Substitute teachers and teacher trainees from local colleges supervise the assemblies while teachers work together. No additional individual teacher preparation periods were added to the schedule when the school expanded learning time; most classroom teachers have three 40-minute preparation periods per week.

Hiatt employs a full time ELT coordinator whose primary responsibilities are to organize and oversee the school's enrichment program, student grouping for academic interventions, and allocation of additional instructional staff to support small group instruction during the school's literacy blocks.

Frank M. Silvia Elementary School

Silvia Elementary School, also known as North End Elementary, is located in the City of Fall River Public School district. Silvia serves students in grades K-5, two-thirds of which are low-income. The school was a member of the second cohort of MA ELT grantees and initiated its expanded learning time program during the 2007-08 school year. The school's expanded schedule increased the amount of students' in school time approximately two hours per day, from six to eight hours per day (five days per week).

The school adopted somewhat different approaches to how it allocated time during its longer day for students in the lower grades (K-3) and students in the upper grades (4-5). In the lower grades, almost three hours per day (170 minutes) were dedicated to literacy and reading instruction – an increase of nearly 50 minutes over the time spent prior to expanding learning time. The extended literacy blocks included time for whole group instruction and embedded “interventions,” where students were placed in smaller groups, according to instructional level, within the classroom and provided with targeted assistance and enrichment. Students also received nearly 90 minutes of math instruction per day – about the same amount of time as before it implemented an expanded school schedule. One hour was dedicated to instruction in core content. This is augmented by 30 minutes (at the beginning of the school day) of “calendar math,” an interactive math curriculum that allows for daily exposure to grade level math concepts. Students typically had about one hour of science or social studies instruction per day (an increase of approximately six minutes over what was offered prior to expanding learning time), which also includes embedded activities intended to further expand students' literacy skills.

At the lower grades, additional staff are “pushed in” to classrooms to assist with instruction and interventions. A key feature of Silvia's expanded learning time program was the “repurposing” of its paraprofessionals to provide instructional support in classrooms. Prior to expanding learning time, paraprofessionals were primarily responsible for general administrative support (e.g., office assistance, classroom coverage, lunchroom monitors, etc.). With its expanded schedule, 12 paraprofessionals work in classrooms for the full school day and provided additional instructional support to teachers. Another three paraprofessionals spend approximately 30 minutes in classrooms each day to provide additional instructional support for literacy interventions. The school invested a portion of its MA ELT Initiative grant in outside training for its paraprofessionals in literacy

instruction and interventions, including “Project Read” (30 hours), ERI (6 hours), and Sidewalks (3 hours). The school’s instructional coaches also provided paraprofessionals with ongoing training and support in curriculum adaptation and instruction.

The school’s ELT program for students in grades 4-5 looks somewhat different. To some extent this is due to the fact that instruction in the upper grades is departmentalized, as opposed to students being taught by a single teacher throughout the school day. For 2009-10, upper level students received about 140 minutes per day in literacy-related instruction – an increase of about 20 minutes per day from what was offered prior to its expanded learning time program. This time was broken out into three distinct blocks – 60 minutes for writing, 60 minutes for literacy, and 20 minutes for reading. Students also received about 90 minutes of math instruction per day; this was unchanged from prior to ELT. About one hour of time is for instruction in core content and an additional 30 minutes at the start of the school day is dedicated to “calendar math.” About one hour per day was dedicated to science or social studies instruction. This is an increase of about six minutes per day over what was in place prior to the school’s expanded schedule. The school’s curriculum includes coursework in the unified arts for all students. In a typical week, students participate in approximately 240 minutes of music, art, physical education and technology coursework.

In addition to expanding the amount of time spent on instruction in core subject areas, the school used its MA ELT Initiative grant to adopt new, more intensive, curricula. These curricula require more time to implement during the school day than was available prior to the school’s expanded school schedule. Funds also were used to purchase academic enrichment materials for classrooms instruction, including “Time for Kids” to enrich the school-wide social studies curriculum and the “Elements of Reading” program that consists of vocabulary cards, student notebooks, and teachers manuals.

As was the case with instruction in core subjects, the school’s approach to providing academic interventions for students also differed by grade level. In the lower grades, as previously noted, literacy interventions in the form of small group differentiated instruction and support were incorporated into students’ daily schedule. Additionally, lower level students received another 30 minutes per day of math support. During this time students worked on a skill using math problem solving and games. Students were grouped, within classrooms, and classroom teachers planned and implemented the interventions with the help of paraprofessionals and occasionally the school’s instructional coaches. For students in the upper grades, the final period of the day (60 minutes) was set aside for either academic interventions or enrichment. On Wednesdays and Fridays, classroom teachers, special education teachers, and instructional coaches provided targeted academic support to

students in math and literacy. Typically, classroom teachers worked with struggling students, instructional coaches worked with “high fliers,” and itinerant special education teachers worked with students who performed at grade level. Students were grouped according to ability and need at the beginning of the school year, and regrouped approximately every eight weeks based on student performance, using district benchmark assessment data.

On Tuesdays, the school schedule included the “sacred hour” at the end of the school day. During this time students participated in one non-academic course offering per marking period. Each year enrichment activities are planned according to an identified “focus.” For the 2009-10 school year the focus was “Going Green,” with an emphasis on recycling and the environment. Teachers created standards-based enrichment units (e.g., “Under the Sea,” composting) to educate and raise student awareness on issues affecting the environment. Over the course of the school year, a total of 33 different enrichment units were offered during the “sacred hour.” Students were surveyed to gauge their interests in elective topics and are assigned according to their preferences. Most courses offered during the “sacred hour” were taught by Silvia’s classroom teachers; only three courses were taught by someone other than the school’s classroom teachers, and the school had a very small number of partnerships with outside providers and community members. Once per week during the final hour of the school day students in the upper grades also participated in an “anti-bullying” prevention program, and on a second day they received chorus instruction.

Silvia’s expanded learning time approach incorporates dedicated time for teacher professional development and more time for teacher collaboration and preparation. During the 2009-10 school year, there were eight early release days for students. On these days students were dismissed at 11:45 a.m., and teachers spent three hours in the afternoon engaged in in-house professional development. For the most part, these professional development sessions were developed and facilitated by school staff. All teachers were assigned to one of eight committees (e.g., math, science, data, school improvement, literacy, writing, technology) and tasked with developing professional development in these areas. The committees met during the first half of the afternoon. During the final hour, all of the committees reported back to the full faculty and facilitated discussion around key topics. Paraprofessionals also engaged in ongoing professional development related to literacy and math instruction. The school’s instructional coaches usually lead these professional development opportunities. As a result of the School’s expanded schedule, teachers also received one additional individual preparation period and one common grade level planning period per week.

Silvia’s school principal assumed much of the responsibility for administering the school’s expanded learning time program. She coordinated planning for enrichment activities offered during the

school's "sacred hour," and did much of the work related to planning and executing the school's expanded schedule. The principal and key members of her leadership team also participated in regular technical assistance sessions provided by Mass 2020 and Focus on Results.

Joseph A. Browne Middle School

Browne Middle School is one of three schools in the Chelsea Public School district that serves middle level students. Browne includes students in grades 5-8, the majority of which are low-income, non-White, and do not speak English as their first language.⁹ As a result, the school's academic priorities have focused on improving student literacy, as well as improving student engagement and motivation. Among the schools included in our study, Browne is the most recent recipient of a MA ELT Initiative grant and was in its second year of implementing its program during the 2009-10 school year. With its ELT grant, Browne lengthened its school day to approximately 8 hours per day four days per week. Students attend school for a half-day on Tuesdays, with the remainder of this day set aside for teacher collaboration and professional development. Altogether, with its MA ELT Initiative grant, the school added approximately 30% more instructional time, over the district average, to its schedule.

Browne's expanded learning time program incorporates additional time for academic instruction in core subject areas, supplemented by daily opportunities for academic support. With expanded learning time, the school added ten minutes each day to instructional time in each of the core subject areas (math, science, social studies, and ELA) and the unified arts. On average, students receive approximately 120 minutes of instruction in reading and writing each day, 45 minutes of social studies, 45 minutes of science, and 75 minutes of math. In a given week, students also engage in a daily coursework in the unified arts (53 minutes), including music, technology, health, physical education and art.

Every student also participated in daily 30-minute ELA and math "workshops" that provided additional enrichment or remediation in core subject areas. Students were grouped for workshops according to ability. The school relied on a tiered intervention model, where students in the lowest performing tier were placed in the smallest groups with highly qualified teachers and specialists. Students performing at or above grade level were placed in groups that receive additional academic enrichment that builds on or expands content covered during core instruction. The ELT coordinator, in cooperation with the school's math and literacy coaches, was responsible for establishing the

⁹ Browne also operates the District's middle grades alternative education and Sheltered English Immersion (SEI) programs. Students in both programs participate in the school's longer day. Alternative education students, however, do not participate in the full range of expanded learning time programming. As a result, the resources associated with the school's alternative program are not included in our cost estimates. In contrast, SEI students participate in expanded learning time programming. Accordingly, the resources associated with this program are included in our cost estimates.

academic workshop groupings. Although the process occurred quarterly, the initial groupings for the fall term required the most time and effort, involving consideration of MCAS scores and teacher input.

The School's expanded schedule also included a 7th hour elective period (55 minutes), four days per week. In a given week, most students participated in two academic electives and two non-academic electives during this time slot. Academic electives are standards-based and aligned with the curriculum. For instance, 7th graders could elect to participate in "science experiments" that, over the course of the quarter, permit students to engage in more in depth science exploration and experimentation. Non-academic electives included classes such as yoga, textiles, rock band, and resume writing. Advanced students also were given the opportunity of enrolling in advanced language instruction in French, Spanish and German. Teachers from Chelsea High School visited Browne several days per week during its 7th hour to provide instruction. Students who participate for two years (7th and 8th grades) meet the prerequisite for the second year of language when they move on to high school. Students in grades 6-8 chose the electives in which they would like to participate. However, for the first quarter of the school year, fifth grade students participated in a "getting used to middle school" induction program that spans four elective periods each week. Topics covered include: organization and study skills, an anti-bullying curriculum, Study Island math, and an additional physical education course. Beginning with their second quarter, fifth grade students also were permitted to choose the elective courses in which they wanted to participate.

Most of the academic electives, and a good share of the non-academic electives offered during the 7th hour were provided by full time Browne teachers. The school has a limited number of outside partnerships with community organizations and outside providers. For the 2009-10 school year, the school partnered with four community-based organizations (Boys and Girls Club of Chelsea, Centro Latino, REACH, and YMCA) to provide non-academic enrichment opportunities. It also contracted with several outside consultants and providers to teach 7th hour non-academic enrichment electives. A key challenge for the school has been getting all of its teachers to "opt in" to teach the expanded portion of the day. For the 2009-10 school year, about 60% of the faculty worked the full ELT schedule. The School's principal noted that this situation can make it difficult to staff courses offered during the 7th hour elective period.

The School's expanded schedule also builds in time for teacher professional development. Students were released early on Tuesdays to accommodate approximately 90 minutes of teacher professional development, three afternoons per month. During this time, teachers engaged in faculty-wide workshops on selected topics. The schedule also included time for teacher Professional Learning

Communities (PLCs). PLCs are an opportunity for teachers to come together on specific topics of interest. While PLCs are a district-wide initiative, Browne's expanded learning time program provides time for PLCs to meet weekly during the school day, whereas this is not necessarily the case in other schools. Teachers also benefited from increased individual planning time – boosted from 43 to 52 minutes per day. The time is scheduled so that it is “common” to all teachers within a particular grade level; however, teachers are not required to meet together during this time. The schedule also provides an additional 55 minutes per week of “administrative time” for common planning and data analysis, over the time allocated in the schedule for individual teacher preparation.

The school employed a full time ELT coordinator who worked with instructional coaches and teachers to group students for academic interventions (workshops and 7th period), as well as schedule and staff academic and non-academic elective offerings. The school principal also constituted an ELT Planning Team that consists of the school's administrators, ELT coordinators, math and literacy coaches, and eight teachers. This group met once or twice during the spring and summer to discuss the overall ELT schedule and to make adjustments to the school's overall ELT program. The school's administrators also regularly participated in technical assistance workshops offered by Mass 2020 and Focus on Results, as well as received one-on-one coaching from Mass 2020.

Edwards Middle School

Edwards Middle School is located in the Boston Public School District and serves middle level students, grades 6-8. The school's student population is primarily poor and non-White. Edwards was a member of the initial cohort of MA ELT Initiative grantee schools, receiving its first state grant for the 2006-07 school year. With its grant, the school lengthened its day to 8¼ hours four days per week; students attend school for a half-day on Friday and the remainder of this day is set-aside for teacher professional time. During the years coinciding with receiving the MA ELT Initiative grant Edwards has risen from one of the worst to one of the highest performing middle schools in Boston.

As part of its expanded schedule, Edwards did not add time to instruction in core subject areas and the unified arts. Monday through Thursday, most students receive 60 minutes of instruction in each of the core subject areas (math, English Language Arts, science and social studies), and about 80 minutes of instruction in specialty classes (physical education, computers, art, health, chorus/theater, study skills). The instructional periods and specialty classes are somewhat shorter on Friday (half day for students). Although the amount of time dedicated to instruction in core academic subjects was unchanged, the school adopted a different strategy for grouping students with its ELT program. Specifically, the school constituted teacher teams who work with a shared group of students. Each team consists of a teacher from the four core subject areas (ELA, math, science, and social studies) as

well as ELL and special education teachers. The students assigned to a particular team move together as a traveling group to each of their core subject classes. Teachers coordinate on aligning curriculum and instruction across the subject areas, as well as communicate about students. Each team has a Team Leader, who is responsible for coordinating team meetings as well as sharing information about the team and student progress with the school's Team Leaders.

Rather than expanding the amount of time spent on instruction in core subject areas, Edwards allocated the additional time in its schedule to academic interventions and enrichment activities. A cornerstone of Edwards expanded learning time program is its "Academic Leagues." Students participate in Academic Leagues approximately one hour each day, Monday through Thursday, resulting in an additional four hours per week of math or ELA enrichment and remediation per student. To ensure a high degree of consistency and focus, students typically participate in one Academic League at a time, which addresses their area of highest need. Depending on a particular Academic League's level, lessons can be focused on remediation of basic skills or on extending and applying concepts learned during core academic instruction. The topics covered by Academic Leagues in a given year are dependent on student needs. During the summer months, members of the School's Instructional Leadership Team use a data-driven process to identify areas of individual and collective student weakness. Academic intervention courses are then built around these areas of weaknesses and serve as the starting point for the various Leagues in which students participate. The School relies on examining MCAS scores as well as teacher and student input to determine in which areas students need the most help, or could benefit from additional enrichment. For 7th and 8th graders, regular Edwards' subject-area faculty led the Academic League courses. However, for the 6th grade, the school relied on Citizen Schools, an outside organization that provides supplemental faculty and support to schools, to organize and teach Academic Leagues. Edwards's partnership with Citizen Schools added about 20 additional full- and part-time instructional personnel to the school per year. This staffing strategy permitted Edwards to redeploy its sixth grade content area teachers to support Academic League groupings in the 7th and 8th grades.

In addition to Academic Leagues, the school also sponsors two "Acceleration Academies" each year. These week long camps typically occur during the February and April school vacations, and provide additional academic support to struggling students that is focused on MCAS test preparation in math and English Language Arts. Additionally, the schedule includes additional time during the school's elective period at the end of the school day for struggling students to receive additional academic support. Students may be assigned up to two additional academic support classes per week during the elective course period. Edwards' students also benefit from a number of organizations that provide volunteer tutors for struggling students. Adult volunteers affiliated with organizations such as

Education First, the Harvard University football team, and Boston Partners all work one-on-one or with small groups of Edwards' students.

Students are assigned to different amounts and types of academic interventions based on their individual needs. This “differentiated scheduling” is the result of a data-driven process by which school administrators and teachers carefully review results from formative and summative assessments to identify students' strengths and weaknesses. While a great deal of this work occurs over the summer to develop student schedules for the coming year, student schedules are re-evaluated throughout the school year based on academic performance and students may be reassigned to different groups or receive more or less academic support. At a minimum, all students are assigned to one hour per day of academic support through their participation in Academic Leagues. However, depending on their needs, they also may receive additional academic interventions – up to two days per week – during the school's elective period at the end of the school day, participate in one or more of the school's Acceleration Academies, and may even receive tutoring from external providers and volunteers. The differentiation in scheduling comes about not only because of the types of courses to which students may be assigned, but also the amount of time students receive academic support. For instance, a struggling student could receive up to four additional hours of academic support per week in math and ELA, beyond what is provided in the context of instruction in the core subject areas.

Edwards' expanded schedule included a dedicated 85-minute block for “elective” courses at the end of the school day, Monday through Thursday. At any one time, students participate in two electives on a rotating, two-day-a-week schedule. Students change elective courses at the end of each semester. Compared to other schools included in the study, Edwards relies more heavily on external providers and community partnerships to provide elective offerings, with approximately one-third of electives provided by outside organizations or individuals; the remaining electives are taught by existing Edwards and Citizen Schools instructional staff. To a great extent, the elective block is an opportunity for students to engage in non-academic electives. However, low-performing students may be assigned to additional academic enrichment or remediation during one of the elective periods, and other students may choose to pursue additional academic enrichment opportunities offered during this period. At any one time about 70% of the electives provide non-academic enrichment, and 30% have an academic focus. Many of the electives provide students opportunities to participate in the performing arts, including band, musical theater, dance, and art. Edwards has largest number of students accepted to Boston Arts Academy, an auditioned high school program within the district for performing arts. For the most part, elective courses are mixed-grade (7th and 8th), with a few electives allowing students from all three grades to participate in a given elective course. Students

select the electives in which they would like to participate by visiting “elective fairs” and through student surveys. The school’s ELT Coordinator is responsible for organizing and scheduling elective offerings, as well as identifying staff (internal and external) to teach the courses.

Opportunities for teacher professional development, planning and collaboration are also incorporated into Edwards’ expanded learning time program. Students are released early several days per year so that teachers can come together as an entire staff for professional development on topics such as developing critical thinking in students, research-based instructional strategies and accommodations for special education students, and the “Context for Learning” math curriculum. Monday through Thursday, teachers receive 80 minutes per day of non-teaching time and an additional 40 minutes of non-teaching time on Fridays, 120 minutes more than what was contractually required. Approximately two hours of teachers’ planning time each week is set-aside for common planning among the school’s eight teacher teams. Typically teacher teams meet three times per week.

The school employs an administrator who also serves as the ELT coordinator. The majority of her time is dedicated to scheduling and assigning students to Academic Leagues and other types of academic remediation and enrichment, and planning for, staffing and assigning students to elective courses that take place during the school’s elective block (40% of her time). Thirty percent of her time is spent coordinating programming within the school day and responding to daily administrative duties. A strong Instructional Leadership Team (ILT) also guides Edwards’ expanded learning time program. This team is responsible for writing the whole school improvement plan (WISP) and developing effective PD sessions that align with these goals. The team also meets monthly to review and decide on instructional resources as well as decisions affecting the school’s curriculum and instruction, as well as school schedule.

Matthew J. Kuss Middle School

Kuss Middle School is located in the City of Fall River Public School district. Serving students in grades 6-8, the majority of Kuss students are low-income and White. Like Edwards and Hiatt, Kuss was one of the first schools to receive a MA ELT grant. Beginning in 2006-07, the school lengthened its day to 7 ½ hours, five days per week – an increase of about 90 minutes per day over the prior school schedule. Coinciding with its participation in the ELT Initiative, Kuss has seen gains in student performance, moving from the first school in the state to be branded as “chronically underperforming” in 2004 to achieving Adequate Yearly Progress (AYP) for the past two academic years.

Kuss did not significantly increase the amount of time dedicated to instruction in the core subject areas when it adopted a longer school day. Most students receive approximately 10 blocks of ELA instruction (44 minutes), 10 blocks of math instruction, 10 blocks of science instruction, and 6 blocks of social studies instruction each week. Students also participate in four blocks of instruction in the unified arts per week (music, art, and two physical education).

Although the school did not add time to core instruction, the school's expanded learning time program integrates additional time for academic interventions, non-academic enrichment, and teacher collaboration activities throughout the school day. First, the school incorporated a 90-minute "ELT Block" into its daily schedule. This block occurs at different times during the school day, and provides students with up to 10 additional periods per week that are filled with academic support, also known as "Ramp Up" and academic and non-academic enrichment. "Ramp up" was modeled after the "Academic Leagues" utilized at Edwards Middle School. The School's redesign team adopted and refined the League structure to create skill and concept based enrichment and remedial coursework in ELA and math. Target skills and concepts are identified during the summer months by the School's leadership team, and standards based units are created for these classes and monitored by the Department Heads and school administration. Kuss' expanded learning time program also includes academic support camps that occur during school breaks. Again, modeled after the strategy adopted by Edwards Middle School, Kuss offers three intersession academic camps per year: ELA MCAS support over February vacation; Math MCAS support over April vacation; and Summer MCAS support for struggling students.

Kuss students also have the opportunity to engage in a broad range of academic and non-academic electives during the school's ELT Block. During the 2009-10 school year, students were able to take elective courses on topics such as drama, cooking, music, journalism, leadership, video production, karate, and swimming. Students were assigned to elective courses twice per year, through the school's guidance counselors. Students rate their top five elective choices, and were assigned to courses based on their rankings, course availability, and grade level (8th graders are given priority in selection). For the most part, Kuss instructional staff developed and implemented the academic support and elective courses offered during the ELT Block; the school relies on a small number of outside partners (e.g., YMCA) to support its elective coursework. With the expanded schedule, Kuss also was able to offer foreign language coursework to all students. Academically gifted students could take foreign language five days per week in lieu of core content courses; all other students were able to choose foreign language as an ELT elective. For the 2009-10 school year, the school's expanded schedule also included an 11-minute "Advisory" period at the beginning of each school day. During this time students have the opportunity to work with teachers on goal setting and developing plans for

personal growth and development. The curriculum used in the Advisory period was developed by classroom teachers over the summer months.

The mix of academic and non-academic enrichment coursework during a given week is unique to each student. Similar to what was observed at Edwards Middle School, the school relies heavily on a data driven process of “differentiated scheduling” for individual students to ensure that academic support and enrichment are aligned with students’ academic needs. Department Heads, Instructional Coaches and teachers meet to review data and make decisions about individual student assignments. For instance, a struggling student may be assigned to four additional Ramp Up classes in math and ELA, leaving room for two periods of non-academic enrichment (or elective) coursework per week. Conversely, a student whose academic performance exempts him or her from needing academic safety net courses may choose elective offerings to fill up the daily ELT block. Student schedules for the ELT block are reviewed quarterly and adjustments made for changes in student needs, performance, and interests.

Another unique feature of Kuss’ expanded learning time program is the amount of time available to teachers for individual preparation and collaboration. With expanded learning time, teachers received two additional individual preparation periods per week (44 minutes each), increasing the amount of time available for individual teacher preparation from seven to nine periods each week. The School’s schedule also incorporates three periods per week for cross-grade level collaboration on content, grade level team meetings, and child study and data analysis. School administrators also utilized MA ELT Initiative grant funds to offer a menu of professional development opportunities, aligned with the school’s instructional focus and academic priorities, over the summer months.

Much of the responsibility for coordinating the school’s expanded learning time program falls to the school principal and one Department Head, who is responsible for developing the school’s schedule. The school principal organized the school’s enrichment activities, and the principal and the Department Head developed the school’s schedule and assigned students to classes. The school’s Redesign Team, an administrative team consisting of school’s administrative team, teachers from each cluster, as well as representatives from the guidance department, supports the school’s expanded learning time program implementation. This team meets voluntarily once per month to discuss school-wide issues and to review and, when necessary, revise the school’s approach to ELT implementation. Select members from this team also participate in technical assistance workshops offered by Mass 2020 and Focus on results.

Summary

The program descriptions make clear that each school's expanded learning time program is unique, being comprised of a different mix of activities and resources. Specifically, although each school included the core requirements associated with the MA ELT Initiative in its expanded learning time program, we find that schools' approaches to expanding learning time differ in terms of what program elements are included as well as the amount of resources, in particular personnel time, are dedicated to executing these programs.

At one end of the continuum is Edwards Middle School, which adopted the most extensive program of the schools included in this study. Edwards' expanded learning time program dedicates considerable additional resources to academic interventions – both within and outside the school day – and incorporates a broad range of enrichment opportunities for students that rely to a greater extent than found in other schools on a network of outside providers and partners to augment the existing teacher workforce. Edwards' schedule also sets aside time each week for teacher professional development, as well as time within the school week for teachers to work together in teaching teams. In contrast, at the other end of the continuum, we find Silvia Elementary and Browne Middle schools. While both schools include all of the elements required for the MA ELT Initiative, their expanded learning time programs rely almost entirely on existing teachers to provide additional academic support and these schools incorporate a more limited set of enrichment opportunities for students, as compared to other schools included in our study. The expanded learning time programs operated by Hiatt Elementary and Kuss Middle schools fall somewhere in between, with each school offering somewhat less extensive expanded learning time programs than Edwards Middle School and more extensive programming than Silvia and Browne, with the key points of distinction being the amount of time dedicated to academic interventions and enrichment opportunities and the extent to which outside providers and partners are brought in to support these activities.

Cost Estimates

In this section, we present the marginal per pupil costs for each school's expanded learning time program, examine how these costs are distributed across key program elements, and explore factors that account for the differences in costs of the expanded learning time programs adopted by selected schools. As demonstrated in Figure 4, schools included in this study took different approaches to expanding learning time, with several schools electing to go beyond what is required for the MA ELT Initiative. The cost estimates presented here reflect the full range of resources, and corresponding costs, associated with selected schools' expanded learning time programs - including both those

program elements required by MA ELT as well as other activities and resources schools chose to incorporate in their approach to expanding learning time.

Readers are reminded that the cost estimates presented here are not what schools expend, or pay, to implement expanded learning time programs. Rather, the marginal cost estimates represent the value of the additional resources, over and above those resources already in place in schools, used to implement expanded learning time programs in selected schools. For a school wanting to adopt an expanded learning time program, or for policymakers interested in understanding the range of resources and costs required to implement ELT or assess the cost effectiveness of the approach, these estimates provide a picture of the resources used by selected schools and the additional costs associated with these resources.

Additional Per Pupil Costs Associated with Implementing Expanded Learning Time Programs

Table 1 presents the annual per pupil costs associated with the additional resources schools used to implement their expanded learning time programs. The estimates exclude existing resources already in place that schools either continued to use in the same manner or that were repurposed or reallocated to support new activities related to their expanded learning time programs. The additional costs are conceptualized as the marginal per pupil costs incurred by schools when they implemented their expanded learning time programs.

We calculated the marginal costs several ways. First, we estimated the annual per pupil marginal cost using actual, or “raw,” values found in each school community (See Table 1, Column 1.) We then adjusted the raw marginal cost estimate for differences in labor costs across school districts that arise from cost of living and other market conditions outside school district control using the Comparable Wage Index (CWI) (Taylor & Fowler, 2006). (See Table 1, Column 2.) The resulting cost estimates represent the cost of a school’s expanded learning time program after adjusting local labor rates for geographic differences in cost of living across the state. The third calculation estimates marginal costs using the statewide average teacher salary and cost of living adjusted wages for other school personnel. (See Table 1, Column 3.) This last calculation controls for variations in labor costs among districts and schools attributable to the mix of teachers (e.g., more or less experience and training) within a school, differences across districts in teacher salary schedules – both related and unrelated (e.g., differences in community preferences with regard to how much they pay teachers) to cost of living differences found in school communities.

Annual Per Pupil Marginal Costs. For the 2009-10 school year, annual marginal costs, valued in terms of raw (or actual) unit prices encountered by schools, range from \$1,418 to \$5,028 per pupil – slightly more than a \$3,600 per pupil difference in annual marginal costs between schools at the

bottom and the top of the distribution (See Table 1, Column 1). Per pupil marginal costs were lowest at Silvia Elementary School (\$1,418) and highest at Edwards Middle School (\$5,028). Hiatt and Kuss middle schools incurred similar costs per pupil for their expanded learning time programs (\$2,395 and \$2,158, respectively), while the cost at Browne was somewhat lower (\$1,882).

Some of the differences in costs among schools are attributable to geographic variations in labor rates across the State as well as differences in the mix of teachers in particular schools and districts' teacher salary schedules. With further adjustments for labor costs (Columns 2 & 3), the relative ranking in cost across schools stays the same but the difference in annual marginal costs for schools at the top and bottom of the range shrinks to about \$2,700 per pupil. That said, even with further adjustments, the differences in costs among schools' expanded learning time programs remains large, and is attributable to programmatic and resource allocation decisions made by schools in implementing their expanded learning time programs.

In the following sections, we explore programmatic differences across schools that account for variations in resource packages used by schools to implement expanded learning time. These analyses provide insights into the ways in which schools invested additional resources as a result of their participation, and the extent to which schools' programmatic decisions impact costs.

Table 1: Per Pupil Marginal Costs for Schools' ELT Strategies, 2009-10 School Year

	Marginal Cost		
	Per Pupil Cost	Adjusted Per Pupil Cost	Adjusted Per Pupil Cost
		(2005 CWI)	(2005 CWI & Average State Teacher Salary)
	(Column 1)	(Column 2)	(Column 3)
Jacob Hiatt Elementary School	2,395	2,492	2,513
Frank M. Silvia Elementary School	1,418	1,518	1,570
Joseph A. Browne Middle School	1,882	1,810	2,006
Edwards Middle School	5,028	4,825	4,332
Matthew J. Kuss Middle School	2,158	2,300	2,412

Distribution of Marginal Costs Across Program Elements. In addition to estimating the per pupil marginal costs associated with schools' expanded learning time programs, we also looked at how these costs were distributed across expanded learning time program elements common to all of the schools included in our study. Examining the distribution of marginal costs across programmatic areas provides insights into the relative weight selected schools placed on different aspects of their

expanded learning time programs, and offers insights into the ways in which schools invested additional resources. Specifically, looking across the schools included in this study, we find several important patterns in the distribution of marginal costs across key programmatic elements.

First, in most schools, the bulk of the additional costs associated with extending the school day were associated with increasing the amount of time spent on instruction and academic support in core subject areas. At Hiatt Elementary School, nearly 69% of the additional costs related to its ELT program went to providing additional instructional time in core subject areas (29%) and additional academic supports and interventions (39%). Similarly, at Edwards Middle and Silvia Elementary schools more than half of the marginal costs for their ELT programs were attributable to resources invested in academic interventions and supports. In the case of Edwards Middle School, more than half (55%) of the marginal costs associated with its ELT program went to providing academic supports to students by way of its Academic Leagues, Acceleration Academies and tutoring. At Silvia, the new schedule incorporated longer literacy blocks in the lower grades and additional time in the afternoons for academic interventions (ELA and math) for students in the upper grades, which accounted for about half (53%) of the school's additional costs for its expanded learning time program. About one-fifth of the marginal costs associated with Browne's ELT program were for additional instructional time in the core academic subjects and the unified arts and its academic intervention "workshops."

Second, most schools used their extended day as an opportunity to increase investments in enrichment activities for students. The extent of additional investment in enrichment, however, varied across schools. During the 2009-10 school year, about 30% of Edwards' marginal costs went toward enrichment opportunities for students, and 37% of Browne's additional costs were associated with providing new forms of academic and non-academic enrichment. In both instances, the school schedule was revised to include a dedicated elective block at the end of the school day four days per week where students can pursue elective courses of their choosing. About 8% of Hiatt's marginal costs were associated with additional enrichment opportunities for students. Although Hiatt's schedule included a dedicated block of time at the end of the school day for elective courses, it only does so two days per week. Instead, Hiatt relies on an embedded enrichment model that uses external providers to assist classroom teachers with targeted standards-based enrichment activities. Silvia's schedule includes a dedicated enrichment block at the end of the school day – but, in contrast to other schools, this block occurred only one day per week (the "Sacred Hour"). This enrichment block, however, accounts for about 15% of the additional costs associated with school's expanded learning time program.

Third, between 6 and 24 percent of the marginal costs associated with schools' expanded learning time programs went for program administration and oversight. Interestingly, the schools that allocated the fewest additional resources to program administration were those with a dedicated ELT coordinator. In the absence of a coordinator, program administration typically falls to the school principal and the cost of a principal's time may be proportionally more expensive than a coordinator's time. By comparison to the other schools in the study, Browne Middle School stands as an exception - about 24% of its marginal costs were attributed to program administration and oversight. The higher costs for program administration at Browne may be because the school was a relatively recent MA ELT grantee (in its second year of operation) and was still engaged in the process of establishing its program model or it could be an artifact of the limited data we had available for Browne..

Fourth, compared to other programmatic elements, schools directed fewer new resources toward teacher professional development and teacher collaboration and planning. In most schools, less than five percent of new resources were dedicated to teacher professional development. The exceptions were Silvia Elementary and Browne Middle schools. Silvia Elementary set aside dedicated professional development time during the school year as well as made investments in training its paraprofessionals to provide instructional support. Browne's decision to release students early one day per week to accommodate professional development and meetings for all instructional staff contributed to the relatively larger share of additional costs dedicated to teacher professional development. Although Edwards Middle School also incorporates weekly early release days into its schedule, the relative share of overall costs associated with this program element are much smaller given the considerable additional resources the school invests in academic interventions and enrichment activities for students.

Schools adopted different approaches to allocating additional time for individual and common planning time for teachers. Kuss, Browne, Silvia, and Edwards added time for individual teacher preparation. Kuss also set aside time in its schedule for teachers to engage in common planning time three times per week. Hiatt incorporated common planning time for teachers – one grade level per day. This time, however, was reallocated from time teachers typically would spend in the classroom. During these planning periods, teacher trainees from local universities and academic coaches covered teachers' classrooms.

Table 2: Allocation of Marginal Costs Across Key Program Elements

	Expanded Learning Time Program Elements						
	Administration & Oversight (School)	Academic Instruction	Academic Interventions	Enrichment Activities	Teacher Professional Development	Teacher Collaboration & Planning	Facilities, Transportation & Other Direct Costs
Joseph A. Browne Middle School	24.2%	4.0%	17.1%	37.2%	7.3%	6.9%	3.3%
Edwards Middle School	5.9%	0.0%	54.5%	29.6%	2.0%	7.3%	0.8%
Jacob Hiatt Elementary School	9.1%	29.3%	39.3%	8.3%	1.6%	11.3%	1.2%
Matthew J. Kuss Middle School ^a	17.2%	0.0%	1.2%	67.9%	4.2%	9.4%	0.0%
Frank M. Silvia Elementary School	14.1%	0.0%	52.5%	15.1%	5.8%	12.5%	0.0%

^a Kuss' approach to scheduling students for its daily "Ramp Up" ELT block, which includes a student-specific mix of academic interventions and enrichment activities, made it difficult for us to effectively partition the costs between academic interventions and enrichment activities. The extent to which resources – notably teacher time – is dedicated to interventions vs. enrichment, shifts throughout the school year according to student needs. As a result, we could not effectively partition marginal costs between "academic interventions" and "enrichment" programming and, instead, categorized all resources and corresponding costs under "enrichment." The share of marginal costs allocated to "academic interventions" reflect those costs associated with intersession academic camps.

Finally, most schools in this study incurred few, if any, additional costs for facilities, transportation or other operating expenses as a result of expanding learning time. That said, there are two important considerations when interpreting this finding. First, the cost estimates presented in this study reflect the direct costs incurred by schools when developing and implementing their expanded learning time program. In many instances, facilities, transportation and other operating expenses are actually district-level costs. As a result, they are not included in our estimates. Second, in our conversations with district and school officials we learned that accommodations were made to keep transportation costs to a minimum. The districts in our sample were able to adapt bus schedules in ways that did not require additional routes. Other districts considering implementing expanded learning time, however, may not have this same flexibility.

Factors Influencing Costs

The program descriptions make clear that each school's expanded learning time program is unique, being comprised of a different mix of activities and resources. The complexity inherent in these programs makes it difficult to disentangle specific factors that account for variations in costs. That said, looking across the schools included in this study, schools' programmatic decisions in two key areas appear to account for much of the observed differences in observed costs: 1) the extent to which schools elect to adopt expanded learning time programs comprised of greater or fewer programmatic elements, and that extend beyond the basic framework set forth by the MA ELT Initiative; and 2) schools' staffing decisions, in particular their decisions to augment teacher time with other instructional personnel and outside providers.

First, the differences we found in schools' approaches to developing and implementing expanded learning time programs translate into differences in schools' additional program costs. Of the schools included in this study, Silvia Elementary and Browne Middle schools incorporated the fewest number of programmatic elements in their approaches to expanding learning time. Neither school incorporates extra programming beyond the 300 hours required by the MA ELT Initiative, such as intersession academic camps or academic tutoring, and the schools' academic support and enrichment activities are generally limited to those offered by existing classroom teachers and other instructional staff, with little reliance on outside providers or instructional staff to augment programming. These programmatic decisions translate into lower overall per pupil marginal costs - the lowest amongst the schools included in this study. Their programs simply incorporate fewer elements and as such require fewer resources to implement. At the other end of the continuum we find Edwards Middle School, with the highest per pupil marginal costs. Edwards has the most extensive expanded learning time program that includes a broad range of academic interventions and

enrichment opportunities for students, as well as a cadre of external instructional personnel from Citizen Schools that augment the school's existing teaching staff. The expanded learning time programs at Hiatt Elementary and Kuss Middle schools fall somewhere in the middle of the continuum with regard to programmatic features, and similarly fall in the mid-range for marginal costs.

The extent of programming incorporated in a schools' expanded learning time program, however, does not entirely account for cost differences. Schools' decisions about whether they add personnel hours over and above those available from classroom teachers, and the extent to which they rely on outside providers and partners to supplement or supplant teacher time during an expanded school schedule play important roles in determining program costs. As a result of their participation in the MA ELT Initiative, schools included in this study added between 90 and 150 minutes per day of additional time for students – Hiatt added 90 minutes per day; Silvia, 120 minutes per day; Browne added about 11.5 hours per week (roughly 150 minutes per day); Edwards added 135 minutes per day; and Kuss added 90 minutes per day.¹⁰ The amount of instructional time added to the school day in and of itself, however, does not fully account for the variation in costs across schools. For example, Silvia Elementary School has the lowest per pupil marginal cost but added 120 minutes to its school day, while Hiatt added 90 minutes per day and has nearly double the per pupil marginal costs for Silvia's program after adjustments that standardize labor rates across schools.

Instead, what we found is that some schools augment their existing teacher workforce with additional instructional staff – either through partnerships with outside providers or by bringing on additional staff. Typically, these additional staff served one of three purposes.

1. Augmenting or adding to the number of instructional personnel available for instruction and support in core academic subject areas. Outside personnel play a role similar to classroom teachers, leading instruction or academic interventions in classroom settings.
2. Assisting existing teachers with providing academic interventions and small group instruction for students in classroom settings. Outside personnel serve as teacher assistants or aides, and provide targeted support for students under the supervision of classroom teachers.
3. Leading enrichment activities. Outside partners, providers, and individuals with specialized expertise in selected topic areas are brought in to lead enrichment activities for students (e.g., robotics, girls groups, photography, dance, etc.).

¹⁰ This is the amount of time added to the school day for the 2009-10 school year, compared to the year prior to the school's participation in the ELT Initiative. It is important to note that since the 2009-10 school year some schools have changed the amount of time added to their school schedule.

Two factors motivate schools' decisions to supplement their existing teacher workforce with external providers and consultants. First, not all teachers elect to work an expanded school day. (See Table 3.) In all schools, teacher labor agreements prohibit the school from requiring existing teachers from participating in expanded learning time, although new teachers can be required to participate. As a result, some teachers either opt out of teaching the extended day, or only opt in to teach a portion of the longer day or to work a longer day a few days per week.¹¹ Schools relied on external providers, teaching consultants, and substitute teachers to offset these gaps in instructional resources. Second, schools relied on outside providers to expand the breadth and depth of academic interventions and enrichment activities available to students. Schools contracted with outside providers to offer enrichment opportunities over and above what was available from existing classroom teachers. They also leveraged external partnerships to add to the instructional staff available for academic interventions, resulting in more targeted instruction and smaller student groupings.

The extent to which schools opt to pull in additional personnel to serve one or more of these purposes directly impacts the costs of schools' expanded learning time programs. In fact, for the schools included in this study, when the value of outside personnel resources is deducted from the marginal costs associated with their expanded learning time programs we find fewer differences in program costs across schools. (See Table 2.) The net impact on program costs is a function of the number of additional staff hours schools incorporate into their expanded schedule, and the value of the personnel's time that staff these additional hours. For instance, external providers who largely assume similar roles and responsibilities as classroom teachers are valued at a higher rate than personnel who serve as instructional aides or teacher assistants.

Edwards Middle School offers the clearest example of how a school's decision to bring in additional instructional personnel and external providers for its expanded learning time program affects costs. First, through its partnerships with Citizen Schools, Edwards is able to add approximately 20 full- and part- time instructional personnel to its workforce. These individuals take on many of the same responsibilities as classroom teachers, including providing classroom instruction and interventions in the school's Academic Leagues, participating in instructional team meetings, and developing and teaching academic and non-academic electives. Edwards also relies on a relatively large number of external partners to provide or assist with the academic and non-academic electives offered during its daily 85-minute elective block; external providers teach nearly 30% of the school's elective courses. For the 2009-10 school year, this infusion of additional instructional personnel and reliance on

¹¹ In most schools, this is not the case for new teachers who begin employment after receiving the MA ELT Initiative grant. New teachers must agree to work a longer school day as a condition of employment according to the union agreement in some districts.

outside providers to assist with its enrichment curriculum was valued at \$1,273 per pupil. If this amount is deducted from Edwards overall per pupil marginal costs, the cost estimates for its program are reduced to \$3,059 per pupil.¹²

Table 3: Adjusted Per Pupil Marginal Costs, Net the Value of External Personnel and Providers (2009-10)

	Per Pupil Marginal Costs ^a	Value of Time from Additional Instructional Personnel & External Providers	Per Pupil Marginal Costs, Less Value of Additional Personnel & Providers
Jacob Hiatt Elementary School	2,513	285	2,228
Frank M. Silvia Elementary School	1,570	35	1,535
Joseph A. Browne Middle School	2,006	38	1,967
Edwards Middle School	4,332	1,273	3,059
Matthew J. Kuss Middle School	2,412	250	2,162

^a The marginal per pupil costs used for comparison are those found in Table 1, Column 3, and were calculated using statewide average teacher salaries and other personnel costs adjusted for local labor markets using the CWI.

We found a similar circumstance at Hiatt Elementary School. In this case, the school relied on a cadre of teacher interns from local universities to provide additional academic support during the school’s extended literacy block. Interns are “pushed in” to classrooms to provide additional resources for small group, or individualized, instruction. Interns also provided coverage while teachers participated in common planning time and professional development that occurred during the school day. Also, like Edwards, Hiatt works with a broad range of external partners to provide academic and non-academic enrichment through special projects embedded in the core curriculum, dedicated time during the school’s elective period, and field trips. For the 2009-10 school year, the additional time provided by student interns and outside providers was valued at approximately \$285 per student. If this amount is deducted from Hiatt’s overall per pupil marginal costs, the marginal cost estimate for its expanded learning time program is \$2,228.

Similarly, Kuss Middle School draws upon outside consultants and volunteers to supplement existing teaching personnel in providing targeted academic interventions and enrichment activities. The value of this additional time is approximately \$250 per student. Absent these additional personnel resources, the marginal cost estimate for its expanded learning time program is \$2,162.

¹² Note that this is not what Edwards paid out of pocket for these additional instructional resources. They are able to reduce their actual expenditures for additional staff by using outside partners and volunteers.

In the cases of Browne Middle and Silvia Elementary schools, we found that both schools rely heavily on their existing teachers to provide academic interventions and supports, and to staff their enrichment activities. That is, the additional instructional resources these schools have added to their existing staff is quite limited. This accounts for the similarity in unadjusted per pupil costs for each school's expanded learning time programs. However, although Silvia did not rely heavily on outside providers and partners for additional staff time, the school changed how it used existing instructional support staff to assist with academic supports and enrichment. In contrast to Hiatt's strategy of relying on outside teacher interns to provide support during small group instruction in the classroom, Silvia re-purposed its existing cadre of paraprofessionals. Specifically, the school used a portion of its MA ELT grant to provide literacy and pedagogical training for its existing paraprofessionals and subsequently placed these individuals in lower grade level classrooms to assist teachers and provide students with additional academic support. The school also changed how it used instructional coaches' time. Prior to instituting its expanded learning time program, coaches spent most of their time reviewing data and assisting teachers with planning curriculum and instruction. With the expanded school day, coaches now spend time working directly with students, providing academic support and enrichment in both literacy and math. In both instances – with the paraprofessionals and coaches – Silvia repurposed existing staff or reallocated staff time, with no net impact on the per pupil marginal costs associated with implementing its expanded learning time program.

Additional Cost Considerations

In this study we estimate the marginal per pupil costs for selected schools' expanded learning time program. In developing our estimates we focus on identifying those resources schools used to implement their programs, and the corresponding costs associated with these resources. In this section we consider a number of additional factors that may impact the costs associated with implementing expanded learning programs in schools, including the sensitivity of our estimates to alternative staffing configurations that schools might use for their program and other resource-related costs that may be incurred by states or school districts, above and beyond those incurred by schools.

Trade-offs in Staffing Decisions Made by Schools

For the most part, the schools included in our study relied heavily on existing instructional personnel – particularly classroom teachers – to staff the additional time introduced by an expanded school schedule, and supplemented this time to greater and lesser extents with external non-certificated staff. However, this need not be the only model for staffing additional in-school time. In fact, to the extent that schools have flexibility in the type of personnel they can employ for instructional and

non-instructional activities, schools might opt to staff additional time exclusively with non-certificated staff or outside providers and partners, or only rely on existing classroom teachers available in their school and district. The decision to rely more or less on classroom teachers in staffing additional in-school time has significant implications for program costs. The value placed on time provided by external staff – especially those without teaching degrees or instructional experience – is typically somewhat less. For instance, in Massachusetts, the average hourly wage for a teaching assistant is \$19.11. This stands in contrast to average hourly wage for a certificated teacher of \$61.24.

In Table 3, we show the sensitivity of our cost estimates to two potentially different staffing arrangements. Column 1 reports per pupil marginal costs for selected schools' expanded learning time programs. These costs represent schools' existing decisions about the amount of personnel time as well as how this time is staffed. In Columns 2 and 3 we adjust these estimates. Specifically, we estimate the per pupil marginal costs for schools' expanded learning time program assuming that dedicated academic intervention and enrichment periods during the expanded school day are staffed: 1) exclusively by non-certificated staff, whose time is valued at \$19.11 per hour; and 2) exclusively by certificated teachers, whose time is valued at \$61.24 per hour.

As might be expected, the impact on per pupil marginal costs associated with staffing additional time with non-certificated staff is largest in schools that incorporated more personnel hours – above and beyond those available from existing classroom teachers – into their expanded learning time programs. Across the board, selected schools relied heavily on existing teachers to support these activities. As a result, substituting the non-certificated staff, whose time is valued at a much lower hourly rate, has a significant impact on program costs. For instance, a decision by Edwards Middle School to staff additional in-school time exclusively with non-certificated teaching assistants might reduce per pupil marginal costs by nearly \$2,200 per pupil. Similarly other study schools might realize large decreases in per pupil marginal costs by staffing the additional time for academic interventions and enrichment activities with teaching assistants, or other non-certificated personnel. In contrast, we find that staffing additional time with certificated teachers has less of an impact on per pupil marginal costs. In large measure, this finding makes sense given that all of the schools in this study primarily rely on existing classroom teachers to staff additional time for academic interventions and enrichment activities.

For schools considering expanding in-school time, however, the decision to staff additional time with non-certificated personnel or classroom teachers goes beyond costs and will necessarily need to take into account concerns regarding the quality of instruction and enrichment opportunities provided to students as well as state rules and regulations governing personnel requirements. That said, the

analyses presented here suggest potential gains in efficiency to schools who carefully match the skills required to provide instruction, supports, and enrichment with available staff skills.

Table 4: Adjusted Per Pupil Marginal Costs That Reflect Different Potential Staffing Decisions by Schools for Enrichment Periods

	Enrichment Periods Staffed with Existing Mix of Instructional Personnel^a (Column 1)	Academic Intervention & Enrichment Periods Staffed with Non-Certificated Staff Only (Column 2)	Academic Intervention & Enrichment Periods Staffed with Certificated Teachers Only (Column 3)
Jacob Hiatt Elementary School	2,513	1,766	2,516
Frank M. Silvia Elementary School	1,570	981	1,924
Joseph A. Browne Middle School	2,006	1,313	2,006
Edwards Middle School	4,332	2,113	4,865
Matthew J. Kuss Middle School	2,412	1,655	2,575

^a The marginal per pupil costs used for comparison are those found in Table 1, Column 3, and were calculated using statewide average teacher salaries and other personnel costs adjusted for local labor markets using the CWI.

Costs Incurred by States & School Districts

In our work, we focus exclusively on the resources employed by schools. The resulting cost estimates represent the direct costs to schools, and do not include resource-related costs that may be incurred by the State or school districts. However, our case studies suggest that some districts may incur additional costs, but that the magnitude of these costs is highly dependent on district policy and practices.

Districts may provide snacks for students, adjust bus transportation schedules, and typically absorb the costs associated with the added time school facilities are available to school personnel and students. However, the descriptive evidence indicates that these types of additional costs were relatively small, particularly when considered on a per pupil basis. For instance, in cases where districts provided snacks to students, the costs associated with program component were typically limited to the actual expense of the food served and a small amount of additional labor to support food distribution and clean up. Furthermore, the expenses associated with providing snacks oftentimes were covered by federal nutrition grants. None of the districts in our study reported

altering transportation schedules or requiring additional transportation to support the longer school day; rather, existing resources were redeployed in ways that were cost neutral. Finally, the added costs associated with operating facilities (e.g., electric, heat, etc.) during the additional hours schools were reported as negligible. School buildings were typically open and utilized during the time periods covered by the longer school day even before expanded learning time programs were put in place. Our estimates include the costs associated with the additional time required from school-based facilities personnel (e.g., custodial and administrative) in cases where more time for these individuals was incorporated into the school's operating plan as a result of lengthening the school day.

Personnel costs associated with district contributions to teacher and other instructional personnel pensions, however, may be an important additional cost consideration. The additional wages paid to instructional personnel, particularly classroom teachers, are typically "pensionable." That is, the district, may be required to make supplementary contributions to teacher's retirement accounts based on the additional increment in wages associated with the added time a teacher works. The magnitude of this contribution varies by district and will depend on: 1) the actual amount in additional wages paid to teachers; and, 2) the contractual requirements that govern the percent of wages a district must contribute. In cases where a district, or even a state, operates a defined benefit retirement plan where an individual's pension is based on salary at retirement (or years leading up to retirement), the additional pay teachers receive as a result of working additional time would add to the costs of expanding learning time. Our cost estimates do not include pension-related costs that districts may incur as a result of schools implementing expanded learning time.

Technical Assistance for MA ELT Grantees

In the case of the MA ELT Initiative, the State partnered with external providers – notably Mass 2020 and Focus on Results (FOR) – to provide ongoing training and technical assistance to schools to support their redesign efforts. While our cost estimates include the time school personnel engage in activities and one-on-one consultation with these outside partners, they do not reflect the resources that Mass 2020 and FOR put forward in support of grantees' efforts to expand learning time. Omitting these resources from our analysis underestimates the costs associated with fully implementing the MA ELT initiative, and may be a consideration for other states and districts considering adopting similar approaches to expanding learning time in schools.

Impact of MA ELT Grant Amount on Program Costs

It is important not to underestimate the extent to which external factors affect schools' expanded learning time strategies. In the course of our interviews with school leaders and other personnel, we learned that teacher labor contracts and the State's per pupil contribution weighed heavily with regard to how schools went about designing and implementing their expanded learning time

program. Teacher time was the most important, and expensive, resource in schools' efforts to expand learning time. All of the schools in our study sample are subject to provisions in teacher labor agreements that define teacher contract hours for a given school year and how teachers should be paid for time over-and-above this threshold. The approaches to paying teachers for their extra time vary across school districts, including: percentage salary increases concomitant with additional percentage of time worked; standardized annual stipends; and a pro rata hourly wage for a fixed number of additional hours worked. In this context, districts and schools are essentially subject to a preset formula for budgeting teacher labor costs, comprised of the district's approach to compensating teachers for added time, the number of teachers in a school, in some instances teacher qualifications (which dictate where they fall on the district's salary schedule), and the number of additional hours teachers work. As a result, in many regards, expanded learning time programming in schools was dictated first and foremost by the results of this formula. In many cases, schools calculated the value of increasing teacher time and then based their decisions regarding additional programming on the amount of the MA ELT Initiative grant that was left over for activities other than those staffed by teachers. The impact of this calculation on expanded learning time programming has become more important over time. The MA ELT Initiative grant has been fixed at \$1,300 since the program's inception. However, during this time schools have realized increases in labor costs. As costs have gone up, some schools have scaled back their expanded learning time programs (e.g., shortened the school day, reduced enrichment programming), and others reported having to increasingly rely on local funds or seek outside grant funds or other resources to augment the MA ELT Initiative grant.

Summary

This study explored the additional resources used by a select group of MA ELT Initiative grantees to implement expanded learning time in their schools. The schools included in this study adopted a variety of different approaches to developing expanded learning programs, each of which relies on a different package of resources. The snapshot of schools' expanded learning time programs and the resources used to implement these programs provides an important reference point for policymakers and practitioners as they consider expanding learning time in schools. Taken together, this study points toward the following key findings.

First, the actual annual additional cost of implementing expanded learning time in a select sample of Massachusetts' schools ranges from \$1,418 to \$5,028 per pupil. Some of the differences in costs among schools are due to variations in local labor costs, notably teacher salaries. This is not

surprising, given that the schools included in this study relied heavily on existing classroom teachers for the time necessary to staff an expanded school schedule. In this context, differences in local prevailing teacher labor rates, as well as district-specific teacher salary schedule adjustments for teacher training and experience, can have a considerable impact on the actual costs schools incur when expanding learning time. However, even after accounting for differences in labor rates across school sites, we still find considerable differences in program costs across selected schools – nearly \$2,700 per pupil between the least and most costly expanded learning time programs. In large measure, the differences in costs are the result of programmatic decisions made by schools related to how they used existing instructional personnel and whether they supplemented existing staff time with outside providers and instructional personnel.

Second, for most of the schools in this study, the majority of the additional costs for implementing an expanded learning time program were associated with new investments in academic instruction and support and student enrichment activities. Fewer additional resources were targeted at teacher professional activities, including collaboration and planning and professional development. Understanding the how and why schools go about setting programmatic priorities is an important area for future research.

Third, our study suggests that two key programmatic decisions by schools have the greatest potential impact on the additional incremental costs schools incur when implementing an expanded learning program. Schools must initially decide to what extent they will rely on existing classroom teachers to staff their expanded schedule. In the case of the schools included in this study, the majority of classroom teachers opted to work a longer school day. However, this need not be the case. Personnel time typically comprises the largest share of the additional costs associated with an expanded school schedule, and classroom teacher time is one of the most highly valued personnel resources at schools' disposal. Schools might consider staffing additional in-school time with a mix of certificated and non-certificated instructional personnel and outside partners, or even rely exclusively on outside personnel to staff the additional time. Looking forward, a key question facing policymakers and practitioners will be: What is the most efficient allocation of staff qualifications and time to support an expanded school schedule? Our case studies also point toward a second critical decision schools encounter when developing their expanded learning time program – whether to supplement available personnel hours with time from outside providers and partners. Several of the schools included in this study opted to bring in additional providers and partners to offer academic and non-academic enrichment, above and beyond that provided by the schools' existing staff. Depending on the number of additional hours, the costs associated with these additional staff have the potential to significantly increase program costs. This raises two additional questions for future research –

specifically, 1) What, if any, is the optimal number of hours that should be added, and to what purposes should this additional time be dedicated? And, 2) Over and above existing personnel, what qualifications or characteristics should schools seek in outside partners and personnel to ensure program quality?

Given the variation in schools' expanded learning time strategies, an important next step will be to combine the cost estimates for schools' expanded learning time strategies with multiple measures of program effects. This is particularly important given the broad range of strategies, and resulting costs, among schools. While the cost estimates provided in this report are useful to education policymakers and practitioners interested in understanding the resources, and corresponding costs, associated with implementing different approaches to expanding learning time, they cannot address other critical questions regarding which expanded learning time strategies are most cost effective at achieving a broad range of outcomes, including boosting student learning, engagement and academic persistence. By combining both cost and outcome data from the different schools, it may be possible to determine which school-based models for expanding the school day provide the best results for any given package of resources or that minimize costs. Expanded learning time has the potential to be a "high cost" policy. As such, evaluating the relative efficiency of different schools' strategies as well as comparing the cost effectiveness of expanded learning time to other whole school reforms is a necessary and important next step for future research.

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Appendix A

Table A.1: Teacher Staffing Decisions in Selected MA ELT Schools (2009-10)

	# of FTE Classroom & Specialty Teachers	# of FTE Teachers That Work Full ELT School Day	FTE Teachers Who Do Not Work Full ELT School Day	External Providers & Outside Consultants/Instructors
Joseph A. Browne Middle School	38	23	<ul style="list-style-type: none"> - 1 teacher works 75% ELT schedule (early morning & two late afternoons) - 9 teachers work 50% of ELT schedule (either 7:20 a.m. – 2:45 p.m. OR 8:00 a.m. to 3:51 p.m.) - 4 teachers work no ELT 	<ul style="list-style-type: none"> - Contracts with external providers and outside consultants for enrichment (e.g., Boys and Girls Club of Chelsea, Centro Latino, REACH, YMCA, local dance studio).
Edwards Middle School	34	17	<ul style="list-style-type: none"> - 13 teach until 2:15 p.m. (i.e., through Academic Leagues Only) - 4 specialty teachers work elective period only (i.e., do not work during Academic Leagues) 	<ul style="list-style-type: none"> - Citizen Schools (2 FT program coordinators; 7 FT instructors; 7 PT instructors) - Citizen Schools volunteers for apprenticeships offered during Elective Period - 20 outside consultants/instructors for during elective period - Outside personnel to support intersession academic camps - External tutors (Education First, Harvard Football team, & Boston Partners)
Jacob Hiatt Elementary School	24	17	<ul style="list-style-type: none"> - 7 teach through 7th period only (i.e., do not work 8th hour elective period) 	<ul style="list-style-type: none"> - Instructional time provided by unpaid student teachers from local universities - Contracts with external providers and outside consultants for enrichment - Substitute teacher coverage while teachers participate in PD
Matthew J. Kuss Middle School	47.5	42.5	<ul style="list-style-type: none"> - 1 teacher works no ELT - 1 teacher works one extended day per week - 3 teachers work three extended days per week 	<ul style="list-style-type: none"> - Contracts with external providers and outside consultants for enrichment (e.g., Boys and Girls Club, SMILES, YMCA, LEADS). - Substitute teacher coverage while teachers participate in PD - Outside personnel to support intersession academic camps
Frank M. Silvia Elementary School	30	21	<ul style="list-style-type: none"> - 8 teachers work 15% more time - 1 teacher works no ELT 	<ul style="list-style-type: none"> - Contracts with external providers and outside consultants for enrichment (e.g., SMILES, Second Step Nutrition Program). - Substitute teacher coverage while teachers participate in PD