

LEGISLATIVE REPORT

SUBJECT: Requesting that the Department of Education Conduct a Feasibility Study to Examine Various Impacts of a Longer School Day and Increasing the Number of Days in the School Year on Kindergarten through Grade Twelve Students.

REFERENCE: S.C.R No. 72, S.D.1

ACTION REQUESTED: The Department of Education was tasked to respond to S.C.R No. 72, S.D.1, requesting that the Department of Education Conduct a Feasibility Study to Examine Various Impacts of a Longer School Day and Increasing the Number of Days in the School Year for Kindergarten through Grade Twelve Students with attention to the following:

- (1) Determine whether an **extension of the school day**, designed to provide increased academic and socio-cultural opportunities for students in kindergarten through grade twelve, is an affordable and sound investment for the State; and
- (2) Examine the benefits and detriments involved in **increasing the number of days of instruction** in the current school year.

DOE REPORT: Given the limited staff resources and budget, the System Evaluation and Reporting Section (SERS) was unable to conduct a full feasibility study that would have included a carefully developed research methodology and accompanying evaluation approaches. Also, because funding did not accompany the request for a study the section was not able to secure the services of an independent research and evaluation firm as recommended in the Department's testimony during the 2008 legislative session. However, the following report is intended to provide legislators with a summary of key information, issues, and recommendations. The report contains five sections: (1) key points, (2) previous research, (3) financial costs, (4) benefits and detriments, and (5) recommendations.

Key points

Empirical evidence does not support a significant relationship between total number of instructional hours and student achievement.

Empirical evidence provides mixed results on the relationship between number of hours spent in math classes and math test scores. Research results show either no relationship or a weak to moderate non-significant relationship between number of hours in math classes and math test scores. This pattern is the same for science.

There are anecdotal (non-scientific) reports of success for extended day programs.

There is limited evidence from program evaluations of such initiatives as to the program effects on student achievement. Program administrators often cite improved test scores, but in the absence of any formal, systematic evaluation, alternative explanations for the improved test scores cannot be ruled out.

Financial costs and other factors should be carefully considered prior to implementing extended school day or extended school year programs.

Previous research

In 1983, the National Commission on Education published *A Nation At Risk*. Among the report's recommendations for educational reform was the need to devote significantly more time to learning via effective use of "...the existing school day, a longer school day, or a lengthened school year." Since this report, there has been varied attention given to the concept of educational time. More recently, businesses and non-profit groups have brought to the forefront a concern that America's graduates cannot compete in either the national or global economy.

Prior to summarizing the previous research it is important to understand the extended day/year terminology.

Extended school day (also known as extended day) refers to the manipulation of hours in the school day. This can take on various forms. The two most common are: (1) extending the hours in the school day and then lengthening or manipulating the proportion of time spent in classes to accommodate the new school day; or (2)

extending the hours in a school day by “tacking” on hours after regular classes and using that time to provide additional support to struggling students and enrichment opportunities to other students or a variety to both groups of students. The difference between the extended school day in the later example and an after-school program is that the extended day is typically applied to all students (often required), academic and enrichment is focused/linked to the school’s curriculum and standards, is implemented on school grounds, and provides a mixture of programs.

In cases where the application of the later type of extended day program is applied to only targeted at-risk students, there is some question as to whether it can be classified as an extended day program. In these cases, if the application to targeted students is required then the program is considered by many researchers and policy makers to be an extended day program.

Extended school year (also known as extended year) refers to the addition of days or weeks to the school calendar year.

International comparisons

Proponents of extended school day or extended school year often cite the poor performance of students in the United States (U.S.) in comparison to other industrialized nations on international math and science tests. The rationale for such performance is often the increased number of hours devoted to these subject areas (assumption of a longer school day) or the increased number of days in a year. Table 1 summarizes the organization of educational time for countries to which the U.S. is often compared. Table 2 summarizes the organization of educational time for Hawai’i. As shown in Table 1, the U.S. has comparable, if not more, daily instructional hours and subsequently annual instructional hours to the industrialized nations listed. The National Center for Education Statistics (NCES, 1996) conducted a study of U.S. eighth-grade mathematics and science teaching, learning, curriculum, and achievement in an international context. Using Third International Math and Science Survey (TIMSS) data, NCES found that while U.S. eighth grade students scored lower on math and science than other industrialized nations, when compared to Japan and Germany, U.S. students spent more hours in math and science classes. The report suggested that contextual factors such as quality of curriculum, time spent on homework, attending after-school classes, and participating in out of school study support the existing instructional time student’s experience within individual countries. Thus, the overall educational context and expectations in an individual country is important when interpreting results of cross-national studies.

Table 1. Cross-national organization of educational time^a

Country	No. of days in school week	No. of days in school year	No. of hours in daily instructional time: Primary	Annual number of instructional hours: Primary	No. of hours in daily instructional time: Secondary	Annual number of instructional hours: Secondary
United States ^b	5	178-180	5.6-6	997-1080	5.6-6	997-1080
Japan	5	175-220	4.05	709-891	4.6	805-1012
United Kingdom (England, Wales)	5	190	4.2-4.7	798-893	4.8-5	912-950
France	6	180	4.7	846	4.67	840.6
Spain	5	175	5	875	6	1050
Germany	5-6	188-208	2.85-4.35	536-905	4-4.8	752-998

Sources:

1. <http://eacea.ec.europa.eu/portal/page/portal/Eurydice/showPresentation?pubid=047EN>
2. http://nces.ed.gov/programs/digest/d07/tables/dt07_032.asp?referrer=list
3. Baker, Fabrega, Galindo, Mishook (2004). Prospects, vol 24 (3).

^a Some countries have a range of school days, hours in daily instructional time, and annual number of instructional hours as they leave it to their school districts or communities to determine.

^b There is no single information source regarding the average number of school days in a year or instructional hours in a day or year. Individual states set their own parameters. Based on the NCES website there are references to the ranges reported in the table.

Table 2. Educational time in Hawai'i

Level	No. of days in school week	No. of days in school year ^{a,b}	No. of hours in daily instructional time	Annual number of instructional hours
Elementary	5	178, 180	4.7 ^c	836, 846
Middle/Intermediate	5	178, 180	4.05 ^d	721, 729
High	5	178, 180	4 ^e	712, 720

^a Department of Education Official School Calendar 2008-09 (178)

^b Department of Education Official School Calendar 2007-08 (180)

^c Based on OCISS memo effective 9/7/93 stating elementary required 1415 minutes of instruction per week.

^d Based on OCISS memo effective 9/7/93 stating middle/intermediate required 1215 minutes of instruction per week.

^e Based on OCISS memo effective 9/7/93 stating high required 1200 minutes of instruction per week.

Baker, Fabrega, Galindo, and Mishook (2004) conducted a secondary analysis to determine the correlation between instructional time and test scores using data from the Programme for International Student Assessment (PISA), Third International

Math and Science Survey (TIMSS), and the International Study of Civic Education (CIVICS).. The cross-national comparison found no significant relationship between total instructional time and test scores in math. There was a weak correlation between number of hours of math instruction and math scores. Similarly, the within nation comparison found a weak relationship between total instructional time and math, science, and civics scores. The within nation results did indicate positive, albeit a weak and non-significant relationship between hours spent in math instruction and math scores for several countries, including the United States. Students in the United States who received more than 4.2 hours of math instruction per week scored 46 points higher than those who received less than 2.5 hours. This point increase did not change the relative score and standing of students already in the 3rd and 4th quartiles. In addition, for some countries there were negative correlations between hours spent in math instruction and math scores. This may suggest a diminishing return effect for number of instructional hours spent in math and science and test scores.

The data from Table 1 and findings from the international data suggest a tenuous relationship between instructional time and student achievement. This is further complicated by the most recent, 2006 PISA results, which indicate that although U.S. students still perform lower on math and science than several industrialized nations, U.S. students in the 90th percentile performed just as well as students in the 90th percentile for other industrialized nations. These results support the previous NCES (1996) study suggestion that there are other contextual factors important to student achievement. In addition, based on Baker et al. and the most current PISA results it is most likely that those students who would benefit from increased instructional time are those most in need, those in the 1st and 2nd quartiles.

National research

Several major reviews of literature have been conducted with regard to extended school day and/or year. Each of these reviews, accounting for more than a decade of research, concluded that there is none to little empirical evidence to support the assertion that extended learning time via the school day or year results in increased academic achievement (Walberg, 1988; Evans, 1997).

Fashola (1998) conducted a review of extended day and after school programs and their effectiveness. Of the 34 programs reviewed, Fashola noted six showed evidence of effectiveness and three showed evidence of partial effectiveness. Of the six studies that provided evidence of effectiveness, only two were described as being extended school day programs. The first, Extended-Day

Tutoring Program used a methodologically strong design (pre/post, randomized selection) to assess the extent to which participating 3rd graders increased their scores on the Tennessee Comprehensive Assessment Program (TCAP). In general, students scored better than the control group. Students who participated in the program at least 80% of the time scored significantly better than the control group.

The second, Fifth Dimension, a cognitively based extended day program designed to enhance work-study habits, social skills, problem solving, and academic achievement in math, reading, and word problems reported that students who participated did better than students who did not participate. A methodologically weak design was used to assess the effectiveness of the program and no statistics were reported to indicate the magnitude or significance of the program effect.

More recently, the state of Massachusetts initiated the Massachusetts Expanded Learning Time (ELT) Initiative in 2006. Ten schools are currently participating. The evaluation design includes both process and outcome components. First year process evaluation results focused on the perceptions of students and teachers regarding the expectations and implementation of the program (Abt Associates, 2007). Findings from the interviews and focus groups found that each ELT school had adopted one of three types of expanded schedules and that these schedules were reflective of the grade spans. Participating elementary schools implemented integrated expanded school day schedules whereby added time is incorporated throughout the school day and core academic classes are lengthened. Participating middle schools adopted divided schedules in which hours are “tacked” on to the regular school day schedule. Participating K-8 schools adopted mixed schedules which are variations of the integrated and extended day type schedules. The evaluators note that it is difficult to determine if the findings from the first year reflect the type of schedule or the grade span.

Students, parents and teachers participated in focus groups during Fall 2006 and Spring 2007. Also, students and teachers completed surveys during these time periods. Although parents tended to report positive experiences with the expanded day schedule, students had much more varied responses. Students’ survey results indicated an increase in being “very unhappy.” Students that participated in the integrated schedule reported being “happy” or “very happy” more than students participating in the other types of schedules. Students in participating elementary schools were more likely to report they learned a lot in school. Teachers’ survey results indicated that teachers who taught in expanded schedule

perceived more positive impact on classroom instruction including ability to integrate experiential learning, small-group learning, differentiated instruction, and ability to cover more materials. Additionally, these teachers reported more positive impact on student academic performance, student engagement in school, and slightly more positive impact on student behavior, attendance, and homework completion rates. Teachers in the integrated schedules reported much more positive impact on classroom instruction, global indicators (e.g., school climate), professional development, and communication with parents.

The outcome component will look at the relationship between extended learning time and test scores. The scores of those students attending schools participating in the initiative will be compared with those attending non-participating schools. The outcome evaluation report is due to be published in March 2009. Although there is no evidence of program effectiveness with regard to student achievement, there are anecdotal reports from teachers and principals at the participating schools that students get more time to master the material, learn and understand the material better, have less behavioral problems, are more engaged in learning, and have better relationships with their peers. Principals report an increase in test scores on the annual state assessments. While principals may report such increases, the extent to which those test scores are a result of the ELT is an empirical question.

Financial costs

The financial cost of extended day or year initiatives vary by the type and breadth of the program implemented. For example, an extended day initiative for all students would have a different cost impact than an extended day initiative targeting only at-risk students. Table 3 provides some information regarding other states and districts that are currently implementing extended school day or year initiatives. For example, the cost of implementing extended day or year programs in Kentucky would be \$31.8 million, in Massachusetts \$6.5 million for 10 schools to extend the school day for 2 hours and in Texas approximately \$20 million for schools that apply and programs for at-risk kids.

Table 3. Examples for the cost of implementing extended day or year programs

Level (State or district)	Program	Year for which allocated funding data are available	Funding (million)	Per Pupil (dollars)	Comments
State					
Kentucky	Extended School Services Program (ESS)	2007	31.8	NA	Funds distributed to districts; programs vary at school level to include extended schools services via extended school day, week, or year; although not required, programs tend to focus on struggling students
Massachusetts	Expanded Learning Time Initiative (ELT)	2006	6.5	NA	Funding to enable 10 schools to extend school day for 2 hrs and 29 schools to begin planning process to extend school day
Texas	Optional Extended Year Program (OEY)	2008	20 ^a	100.00	Funds distributed to schools that apply; programs must target at-risk kids; programs can vary at school level to include extended day, week, or year
District					
Compton, CA	Extended School Year (ESY) ^a	2000	3	NA	Funds to support 39 additional school days for students in the three lowest performing elementary schools
New York City, NY	Enhanced Instructional Program (EIP)	2008	27.8	NA	Funds distributed to Schools Under Registration Review (SURR)

^a Approximate funding based on phone conversation with Texas Optional Extended Year Program contact (512) 463-6782.

As shown in Table 3, Massachusetts has implemented an expanded day initiative that extends the school day by 2 hours for all students in the participating schools. In contrast, Kentucky and Texas have implemented extended educational time initiatives that can include extended day, week (Saturday classes), or year and are targeted toward struggling or at-risk students. Evaluation reports for Massachusetts and Kentucky have indicated one or more of the following cost factors should be carefully assessed during the planning phases of extended day or year initiatives:

1. Teacher salary increase for additional hours
2. Hiring of staff to provide support or additional cost to increase hours of office staff
3. Facilities (electricity)
4. Transportation (students who catch a school bus, but who are required to attend an extended day program not required of their counterparts will still need transportation)

Benefits and challenges

There are varying benefits and challenges dependent upon which extended educational time initiative is implemented. Table 4 summarizes these challenges and benefits by type of initiative.

Table 4. Summary of benefits and challenges to implementing extended educational time initiatives.

Type of initiative	Benefits	Challenges
Extended day	Students have more time to master material	Cost of implementation
	Students have time to explore via enrichment activities (some programs included extracurricular activities)	Teacher, staff, parent, and student support
	Children are in a supervised environment	Working with the Teacher’s union to establish compensation schedule and other policies regarding the extended time
	School calendar is not altered	
Extended year	Students have more time to master material	Cost of implementation
	Shorter summer break may result in less “loss” of content from previous year	Teacher, staff, parent, and student support
		Working with the Teacher’s union to establish compensation schedule and other policies regarding the extended time Lessened opportunities for traditional summer school courses (e.g., to make up credits)

Recommendations

Based on these findings, we recommend the following:

1. The financial cost of either the extended school day or year initiative would be difficult to support during the current fiscal crisis of the State. As detailed in Table 3, examples for the cost of implementing extended day or year programs in Kentucky is \$31.8 million, in Massachusetts is \$6.5 million and in Texas approximately \$20 million.

Although the financial cost would not make this type of initiative a sound investment at this time, it is noted that a more detailed review of the literature might help to determine if there are specific areas where extended school day/year is effective, and the extent to which one would expect increased positive academic and socio-cultural outcomes among students.

2. The empirical research is inconclusive at best.

Preliminary findings of research summarized in this report suggest there would be no measurable benefit, at this time, to increasing the school day or year. This being stated, it should be noted that much of the national research is correlational in nature and lacks strong methodological designs. Additionally, the literature on the use of educational time in the existing school day has not been thoroughly explored, including combinations of school day or school year strategies.

3. Next steps:

A working committee should be formed to coordinate/conduct a more comprehensive review of the literature, conduct a more thorough assessment of states and districts with respect to their implementation of such programs, explore the financial and related impacts to schools, and to develop a detailed proposal for a pilot study. Such a study should make every effort to seek and involve the participation and feedback of stakeholders and constituents, namely students and parents, departmental staff including teachers and administrators, curriculum specialists, and fiscal and human resources specialists, collective bargaining representation, and community and educational advocates and organizations. Consideration should be given to funding the committee to procure a vendor to conduct the literature review and provide technical assistance in developing the pilot study that includes both formative evaluation of its implementation and summative evaluation of achievement results.

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