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Table of Contents

If you're viewing this document online, you can click any of the topics below to link directly to that section.

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Time and Learning. ERIC Digest.

Since the National Commission on Time and Learning released Prisoners of Time in 1994, the use of time in school has come under increasing scrutiny. The academic day, stated the commission, ought to be reengineered to include fewer noninstructional activities and offer a minimum of 5.5 hours for core subject teaching and even more to meet enhanced state standards (Kane 1994).

Over the years, educators have sought to enhance learning time through such reforms as block scheduling and year-round schools. The 2001 No Child Left Behind Act envisions efficient use of time as an avenue for improving learning.

This Digest summarizes the relationship between time and learning and examines what states and districts across America are doing to make better use of time during the school day. (See "School Calendars," by Bill Metzker, ERIC Digest 156, for a discussion of issues surrounding length of the school year.)

HOW IS TIME USED DURING THE SCHOOL DAY?

School time can be conceived as an inverted pyramid: Allocated time, on the upper, widest tier, consists of the total time in the school day or school year; in the middle tier is engaged time, or the time actually spent in learning activities (sometimes called "time-on-task"); at the bottom, and therefore narrowest part of the inverted pyramid, is academic learning time, or the period during which an instructional activity correlates with a student's readiness to learn and results in actual learning (Aronson and others 1999).
In addition to instruction in core academic subjects, the academic day includes a variety of activities such as music, drama, and sports/physical education. Many people argue these have inherent value in the education of youth and should not be sacrificed.

Ineffective ways of managing the school day can reduce time for teaching, according to a study of instructional time conducted on urban elementary students in Chicago. Site-management as well as classroom-management factors combined to diminish actual learning time. Teachers, on average, spent 23 percent of their time on noninstructional activities. Special days such as Halloween Parties and Science Fairs reduced instructional time. The continuity of teaching was lost when instruction focused on preparation for standardized tests, which were administered midyear. Analysis and reform of administrative practices may increase schools' ability to squeeze more learning time from the day (Smith 2000).

IS MORE TIME THE ANSWER?

In schools where time is not being used well, it is unlikely that the addition of more days to the school calendar will lead to higher academic achievement by students. But if a high proportion of the school day is already being devoted to academic learning time, that is, time when the subject matter being taught is a good "fit" with the student's ability and readiness level, and if high-caliber instruction is occurring, extending the day or year is likely to improve achievement (Aronson and others). Increasing learning time in that part of the day when students are most likely to be engaged in the learning process may yield small gains.

Some people recommend structural changes in the use of time to slow down the day, giving students opportunities for reflection and investigation. The Responsive Classroom(r) model, for example, explores how the quality and quantity of educational time may benefit both students and teachers.

This model incorporates several systemic changes: Narrow the scope of the curriculum and lengthen time blocks for indepth learning; take time at the beginning of the school year to establish clear expectations for students and create an atmosphere of trust; allow time for contemplation and review throughout the year; adjust the daily schedule so that it is more closely aligned with students' learning patterns; ensure that playground time is both a priority and useful; and design the school schedule so that parents, teachers, and staff can interact often (Wood 2002).

ARE THERE OTHER WAYS TO INCREASE LEARNING TIME?

Opportunity for student learning can be increased by ensuring that teachers are employing effective classroom-management strategies, since undue time spent attending to behavioral disruptions or other disciplinary issues reduces instructional time. Consistently providing curriculum and instruction appropriate for the age and ability of students also contributes to student learning. Finally, student engagement and learning will tend to increase if teachers foster student motivation through a repertoire of interesting, innovative, and thought-provoking instructional endeavors rather than offering activities as repetitive seatwork (WestEd 2001).
Opinions vary on whether block scheduling enhances learning. A popular reform during the 1990s, block schedules offer ninety-minute instead of forty-five-minute classes. While supporters assert that a longer class period makes for better learning, a new study by Iowa State University suggests a link between block schedules and declining scores on the ACT assessment test (Coeyman 2002).

One empirical study suggests that a shortened school year, with an added intercession period for low-achieving students, may enhance overall student achievement. Besides a general improvement, a positive impact was noted for students identified as economically disadvantaged on state assessment tests (Byrd 2001).

Time to learn doesn't necessarily stop at the end of the academic day. Given the diversity of student learning abilities, policymakers must view achievement as a complex issue rather than as a problem to be addressed with narrowly focused solutions. Higher achieving students spend more time in structured learning activities outside school. After-school hours, weekends, and summer months all provide opportunities for additional learning to take place (CCSSO 2001). In particular, after school learning has been found to improve students' sense of competence and classroom engagement (Grossman and others 2002).

Summer extended-learning programs that focus on economically disadvantaged students in their earliest grades offer promise in closing the achievement gap (Boss and Railsback 2002).

WHAT ARE STATES DOING?

All states except Minnesota require a minimum number of school days per academic year. While some of these days may be used for inservice training, all but four states require a minimum number of teacher-pupil contact days. Colorado, Nebraska, New Mexico, and Oregon require a minimum number of hours, depending on the grade level (Education Commission of the States 2002).
Some states use extended-learning programs to add instructional time, though some of these programs are primarily designed to provide a safe, structured place for students to be after school if their parents or guardians are at work. California's program promotes after-school community/school partnerships to foster academic support along with safe places for students from kindergarten through ninth grade. Illinois offers year-long extended learning with a summer emphasis on low-achieving third- through sixth-grade students. Massachusetts also provides funding to districts offering extended learning time to students needing help with state assessment tests.

WestEd notes that a more cost-effective approach than increasing allocated time statewide "may be to target extra time to specific schools-or students-with the greatest learning needs. A state could stipulate a range of options for using 'extra time' funds so that local educators can tailor strategies to particular student or school needs or community circumstances."

For example, Kentucky boasts an intervention, as opposed to remedial, initiative. Minnesota's enrichment program and Texas' extended-learning plan focus on disadvantaged students and low-achieving districts (Brown 2001).

States "can also help by reviewing and streamlining state mandates that take time away from teaching and learning as well as by providing school districts with needed information and guidance about best practices" (WestEd). Oregon and New Hampshire officials are examining infringements on instructional time, while the state school board in North Carolina proposed eliminating three annual state tests for similar reasons. New regulations in Massachusetts require a minimum of 900 to 990 hours of structured learning time (Black 2002).

WHAT FINANCIAL FACTORS SHOULD BE CONSIDERED?

The cost of increasing allocated time on a statewide basis "is estimated at millions-or in some states tens of millions-per added day" (WestEd). In California, for example, the

first year of a proposed thirty-day extension of the school year for middle-schoolers was predicted to cost $100 million. Therefore, making better use of time in the existing school year was suggested as a more viable option than adding more days to the school calendar (California Legislative Analyst's Office 2001).
A careful cost/benefit analysis of proposed calendar or schedule changes is critical. Quantifying the cost per minute is one such method. By dividing the total school budget by the number of minutes the school is open, a principal can derive a per-minute value. With this figure, the cost in learning time of specific activities-a thirty-minute assembly, for example-can be calculated. Increases of learning time may likewise be evaluated (Slosson 2000).

Given the high cost of adding time and its uncertain relationship to enhanced learning, schools must focus on maximizing student engagement and raising the quality of teaching. The conceptual model of Total Quality Education (TQE) recommends implementing certain student- centered elements in the classroom: giving students personal responsibility for learning; ensuring that students understand how the curriculum is beneficial; cultivating students' appreciation of the learning process; teaching students to assess their own progress; and helping students to set learning goals and understand how learning activities are related (Walker and others 1998).

Teachers can benefit from professional development on improving time management. The course content should be aligned with students' readiness for the material. Teachers must know the subject matter well and see it through their students' eyes in order to seize opportunities to better correlate content with students' interests and experience (Aronson and others).

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