DOCUMENT RESUME

ED 298 671 EA 020 370

AUTHOR Hossler, Carol-Anne; And Others
TITLE The Relationship of Increased Instructional Time to Student Achievement. Policy Bulletin No. 1.
INSTITUTION Consortium on Educational Policy Studies, Bloomington, IN.
PUB DATE Mar 88
NOTE 5p.
PUB TYPE Collected Works - Serials (022)
JOURNAL CIT Policy Bulletin: Consortium on Educational Policy Studies; nl Mar 1988

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Academic Achievement; Educational Policy; Elementary Secondary Education; *Extended School Day; *Extended School Year; Homework; Instructional Effectiveness; *Time Factors (Learning); *Time Management

ABSTRACT

This bulletin reviews selected research on the relationship of increased instructional time to student achievement. Different ways of increasing time are discussed, including lengthening the school year and the school day, reallocating time within the day to allow more time for instruction, improving teachers' management skills, and increasing homework assignments. The research reviewed generally supports the conclusion that increased instructional time has modest beneficial effects on learning. However, the relationship between time and achievement is not strong, and policymakers should not expect large gains to result from increasing the amount of instructional time in the school day or year. The research is also inconclusive on the most effective and practical ways to increase time. Thirty-six references are included. (TE)

POLICY BULLETIN

Consortium on Educational Policy Studies
BLOOMINGTON, INDIANA

THE RELATIONSHIP OF INCREASED INSTRUCTIONAL TIME TO STUDENT ACHIEVEMENT

Carol-Anne Hossler, Frances Stage, and Karen Gallagher

The Indiana Perspective

In a special session held the day after the close of the 1987 General Assembly, legislators passed a major provision in the education reform bill that lengthens the 1988–89 school year from 175 to 180 days. In doing so, Indiana joined a long list of states considering or making changes in the amount or scheduling of school time. Most of these changes are in response to proposals made in the reform reports of the 1980s. Reports such as *A Nation at Risk* (1983), *Action for Excellence* (1983), *Educating Americans for the 21st Century* (1983), *High School: A Report on Secondary Education in America* (1983), and *Time for Results: The Governors' 1991 Report on Education* (1986) criticized the conditions of public schools and the decline in student achievement. The reports included bold statements such as the following: "Every state should increase both the duration and the intensity of academic learning time in its schools" (*Action for Excellence*, 1983, p. 38).

Adding days to the school year or minutes to the day, or reallocating time within the day are three ways instructional time can be increased by legislative or administrative policy. But how students use this time is the crucial factor in increasing student achievement. As Karweit (1985) has noted, "engaged time"—the amount of time students spend on task—cannot be directly manipulated by legislators (pp. 9–10). Therefore, it is important to consider how other options, like using effective classroom management techniques, can increase students' engaged time. This paper reviews selected research on instructional time and learning. Different ways of increasing time are discussed, including lengthening the school year and the school day, reallocating time within the day to allow more time for instruction, improving teachers' management skills, and increasing homework assignments.

The authors: Carol-Anne Hossler is Assistant Principal at Spencer Elementary School, Spencer, IN; Frances Stage is an Assistant Professor in the School of Education at Indiana University, Bloomington, IN; and Karen Gallagher is an Assistant Professor in the College of Education at the University of Cincinnati, Cincinnati, OH

Increasing the Length of the School Year

According to the Education Commission of the States (1985b), 27 state mandate 180 school days per year. Two states require more than 180 days per year (Ohio —182; and the District of Columbia —184), and two others require less (North Dakota —173; and Missouri —174). The remainder of the states require schools to be in session between 175 and 180 days.

Several studies have examined the relationship between the number of school days and learning outcomes. Coleman et al. (1966) studied the effects of schooling, using absence rates within the regular school year. The researchers found little correlation between number of school days attended by individual students and learning outcomes. However, in a reanalysis of the Coleman data, Wiley and Harnischfeger (1974) concluded that more days in school did significantly increase comprehension, mathematics, and verbal skills. Hanson and Schutz (1975) also demonstrated a strong positive relationship between reading performance and the number of days spent in reading instruction (although they did note that their findings might have been influenced by the uniform instructional materials and techniques used, rather than simply by the time spent on the task). Karweit (1976) found that the number of days in school had a much smaller, but still positive, effect upon student achievement. Fredrick and Walberg (1980) reported that when background characteristics—such as ability and socioeconomic status—were controlled in studies that found a positive association between the number of days in school and reading comprehension, the strength of the association was greatly reduced.

There are no studies that directly measure the impact of extending the school year within a controlled experimental design. That is, no district has increased the number of school days and then studied the effects of the change. A conservative interpretation of the research available would suggest that extending the school year has a small but positive effect on student learning outcomes. Because the studies are relatively short-term, the possible cumulative effect of several years of small gains (which may produce significant increases in learning over the course of a student's educational experience) cannot

be ignored. However, this has not been conclusively established and the question remains as to whether the gains in achievement resulting from increased numbers of days will justify the increased number of dollars spent to lengthen school terms.

Increasing the Length of the School Day

Policy options related to the length of the school day have been considered in a number of states. The length of the school day is determined by guidelines adopted by the state but is usually regulated at the local level. Only 25 states have specific provisions designating instructional time for first through twelfth grades, and 9 states have specific provisions for kindergarten (ECS, 1985a). Over half of the states, through specific provisions or common practice, have school days that are between five and six hours long for the first through twelfth grades.

In 1985, at least six state legislatures were considering altering the length of the school day (ECS, 1985a). Generally, it is assumed that adding extra time to the school day increases the amount of learning that takes place, yet there are no studies on the direct effect of "adding time" to the school day. Levin (1984) warned that adding time may actually reduce the level of student effort because of fatigue. In addition, extending the school day increases the amount of instructional time only if such increases are allocated to instruction, rather than to activities such as standardized testing, longer breaks, or more time for extracurricular activities.

Increasing Instructional Time by Improving Classroom Management

Kemmerer (1978–1979) found significant variations in the *use* of instructional time across school corporations. For instance, fifth grade teachers in self-contained classrooms in New York City provided 52 more minutes of math instruction per week than fifth grade teachers in departmentalized classrooms in Connecticut (p. 2).

Karweit (1985) noted that many factors intervene between the allocation of time by legislatures and the actual time students spend actively engaged in learning. First, allocated time is scheduled by schools for non-academic time (i.e., lunches, breaks between classes) and academic time. Second, academic time is divided by teachers into non-instructional time (i.e., wasted time, disciplinary and procedural matters) and instructional time; the proportion between the two will vary depending on specific teachers' classroom management skills. Finally, assuming that instruction is occurring, "engaged time"—or time on task—will be determined by students' needs, attendance, and attention. According to Karweit, since the path between allocated time and engaged time is so indirect, and since engaged time is the variable of interest, adding more time to the school year does not guarantee that the additional time will be used to any better purpose than already available time. She suggested that "implementing what we already know about effective instruction and classroom management seem[s] to have a much greater potential payoff than simply keeping the school doors open for a longer period of time" (p. 14).

Mazzarella (1984) also suggested several techniques for increasing instructional time such as beginning and ending lessons on time, reducing the transition time between tasks, covering the content as fully as possible, reducing non-instructional activities, and setting state standards for minimum percentages of time spent on academic subjects (p. 20).

In a 1982 interview, David Berliner (Brandt, 1982) claimed that about 25% of all teachers are probably underallocating time significantly in some areas of the curriculum. He further stated that 70% of all teachers could improve the ways they use engaged time. Berliner has conducted studies using in-class coaching to help teachers improve their use of time and has recommended that principals and central office supervisors devote staff development efforts to in-class coaching rather than to lectures and workshops.

Wyne and Stuck (1982) recommended that teachers could improve the quality of their in-class teaching time by: (a) showing students clearly what they are expected to learn and how their achievement will be measured; (b) setting tasks at appropriate levels of difficulty for each student; (c) assigning learning tasks that will result in high rates of success; (d) providing objective feedback; (e) increasing student accountability; and (f) ensuring that tests and curricula are in alignment (pp. 71–72).

If teachers do increase engaged time by improving classroom management, their students will probably benefit; studies have consistently found a modest positive relationship between time on task and student achievement. For example, Leinhardt (1977) studied the achievement of students in three Pittsburgh schools. The study included four time-related variables: attendance, time spent in reading, time spent on mathematics, and time spent in large group instruction. Leinhardt found a modest positive relationship between the amount of instructional time and achievement. Wolf (1979) examined the relationship between time spent on specific subject areas and learning outcomes in those areas. Like Leinhardt, he concluded that time spent on task was moderately related to student achievement. Other studies have documented similar findings (Arlin & Roth, 1978; Bloom, 1976; Hendrickson, 1979).

However, some researchers have cautioned that increased time on task may have some undesirable consequences for at-risk students. Natriello and Dornbusch (1984) found that although high-demand classrooms generally prompt students of all ability levels to work harder, an unintended outcome of a high-demand classroom is that some low-achieving students do not work as hard as they might because they are more likely to feel lost or left behind. They concluded that low-achieving students must be provided with additional direct help if they are to succeed in more demanding classrooms.

McDill, Natriello, and Pallas (1985) reviewed several studies that analyzed the consequences of raising academic standards for potential high school dropouts. They found that increased instructional time generally has a modest positive effect on student achievement.

However, they feared that: (a) placing greater time demands on at-risk students might force students with jobs to choose between school and work (and low-income students who work to help support their families are unlikely to quit their jobs); and (b) added school and homework time might interfere with extracurricular activities, which are often the only bond between potential dropouts and their schools. In short, increasing instructional time may result in more dropouts—an undesirable effect in Indiana, where the dropout rate has already increased over the last 4 years from 19.43% to 22.02%.

Increasing the Amount of Homework

The use of homework is another way to increase the amount of instructional time. Both Beattie (1978) and Kemmerer (1978–1979) stated that homework could be used to increase the amount of formal instructional time. They noted wide variations in the amount of homework assigned and the intended goals of homework and suggested that homework assignments be carefully studied by school corporations to see how they might be used to extend formal instruction.

Some studies have reported that students who do more homework tend to earn better grades. A study by Keith (1982), for example, found that increased time spent on homework contributed significantly to improved high school grades. However, research conducted by Coleman, Hoffer, and Kilgore (1982) and Paschal, Weinstein, and Walberg (1984) noted only moderate improvements in student achievement as the result of increased homework. Moreover, Walberg and Tsai (1984) found that homework had positive effects on learning outcomes only when assignments took less than 30 minutes. LaConte (1981) concluded that homework for older children appeared to have a positive effect when the assignment extended classwork and increased student interest and motivation. However, he also stated that research confirmed "that homework for young children is not only inappropriate, but may well be counterproductive" (p. 17).

Summary

Research generally supports the conclusion that increased instructional time has modest positive effects on learning. However, the relationship between time and achievement is not strong, and policymakers should not expect large gains to result from increasing the amount of instructional time in the school day/year. Moreover, increasing instructional time does not guarantee an increase in engaged time—time spent actively engaged in learning. Schools may allocate the extra time for nonacademic activities; teachers may mismanage classroom time; and students may miss class or fail to pay attention. Many researchers suggest that instead of needing more time, teachers could use more effective classroom management techniques to increase the quantity and enhance the quality of available instructional time.

Several researchers also caution that if students are required to spend too much time in school or on homework, the positive effects on learning may diminish or disappear. Moreover, at-risk students burdened by extra time demands may be even more inclined to give up or drop out.

In sum, increased instructional time does have modest effects on student achievement; unfortunately, research is inconclusive on the most effective and practical ways to increase time (although most researchers do agree that improving teachers' time management techniques would be a good first step). As of yet, no study has been undertaken to assess the impact of the addition of days to the school year. Since Indiana is adding five days to its school year (from 175 to 180 days), it has a unique opportunity to contribute to the developing body of knowledge on the effects of increased instructional time. □

(The authors would like to thank Mark Buechler, Research Associate, Consortium on Educational Policy Studies, for his editorial assistance.)

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POLICY BULLETIN No. 1
March 1988

Consortium on Educational Policy Studies
Education, Suite 326
Indiana University
Bloomington, IN 47405
(812) 335-7445; 335-1240

Martha McCarthy, Director
Gayle Hall, Associate Director

The **Consortium on Educational Policy Studies** is funded by the Lilly Endowment and the Indiana University School of Education and provides non-partisan information on policy issues of current concern to Indiana educators and policymakers.